THE

Journal of the American Medical Association.

EDITED UNDER THE DIRECTION OF THE BOARD OF TRUSTEES.

PUBLISHED WEEKLY.

VOL. XIII. CHICAGO, NOVEMBER 2, 1889. No. 18.

ADDRESSES.

THE ADDRESS DELIVERED BEFORE THE AMERICAN PUBLIC HEALTH ASSOCIATION,

At Brooklyn, N. Y., Oct. 22, 1889.

BY H. A. JOHNSON, M.D.,

PRESIDENT.

[Abstracted for THE JOURNAL.]

Gentlemen of the Association, Ladies and Gentlemen: Article second of the Constitution of the American Public Health Association declares that the object of this Association shall be the advancement of sanitary science and the promotion of organizations, and measures for the practical application of public hygiene.

In the furtherance of this object it has seemed wise that there should be at its annual meetings not only papers upon purely scientific subjects, but that also, in the form of essays or public addresses, an effort should be made to secure the interest and coöperation of those of our citizens who have no official or professional relations to the objects of the organization. In other words, to invite the support of all classes of society in the advancement of public health.

To do this we must demonstrate the truth of the maxim of one of our greatest philosophers that "Public Health is Public Wealth." I shall not, therefore, address myself so much to the scientist, the official and professional sanitarian, as to the people, who, by their presence here to-night, give evidence of sympathy and interest in our work—or rather their work—and to whom, after all, we must look for means to carry out such measures as science shall demonstrate to be for our race most beneficent. Through the ages but little has been done to prolong life and mitigate distress. We know now that much can be done, much that is not done, for the accomplishment of these results. The world has, however, in action, never utilized its fullest capacity for work; in achievement it has never reached its power to do. This is true along all the lines of social and public activity. It is no more true in preventive medicine than in other departments of public endeavor. The great difficulty in the way of successful sanitation has been, and still is a want of adequate knowledge as to the causes of our suffering, and the agencies of our destruction, and a want of confidence in the measures proposed for relief.

Of the beginnings of this desirable kind of knowledge we know but little, but in old records we find some faint suggestions. We know that along the eastern border of the old Ægean sea, and skirting the coast of Asia Minor are numerous islands whose names are embalmed in song or story of ancient Greece. On a high promontory of one of these, in the dim twilight of antiquity, a temple had been erected to Æsculapius. A few miles back, at the base of a line of low hills, there gushed from the rock a stream of warm, life-giving water. Its properties were such as to invigorate and strengthen the wearied and exhausted, and to especially restore to the blood the qualities in which it is usually deficient in malarious countries. In a word, they were chalybeate. Rich in iron, they met most fully the needs of the dwellers along the shores of the islands and the continent, and the crowded cities of Greece. To this temple and fountain the sick from many lands had come, and there had been abundant opportunity to test the healing qualities of the waters. Those who had received benefit had hung upon the walls, or inscribed on tablets which were placed around the temple, brief histories of their diseases and the results of their offerings to God and Goddess. Here, in the fifth century before our era, a young student from a neighboring city, descendant of a long line of priest physicians, established his home. He was a lover of nature, and we may presume that he had been attracted in part by the beauty of the island, with its ridges of low mountains, or rather hills, which skirted the southern border, and which gave birth to cool streams of delicious water destined to give fertility to the northern slopes, the land of the grape, the home of the most generous of wines. The scholar had lingered, not so much for the beauty of the landscape, however, or for the delicacy of the fruits, as for the interest which he felt in the curative properties of the fountain itself. While he believed in the Gods, he was, nevertheless, a close observer of nature. Here in the temple had

already been established a school of medicine. The facts were the inscriptions just alluded to, placed upon the walls, left by those who had been cured by their visit to the temple and the grove, and in answer to their prayer to the deities of health and medicine. The young truth-seeker approached reverently the altar, but looked at the phenomena occurring under these influences as, nevertheless, the product of something in the world of matter. Time passed swiftly and happily in the pursuit of a more reasonable understanding of disease and its cause, and a more accurate knowledge of the instrumentalities by which it is modified.

His fame began to spread through the island and to the shores of Asia and Europe. Numbers came to consult him. His advice was sought in times of pestilence, and he had come to be regarded as one of the wise men of his age. Whether myth or history we know not certainly, but the story is that while he was patiently pursuing his studies and questioning nature, a messenger from the chief city of Greece landed upon the island. The angry gods, so the stranger said, had stricken in their wrath, the whole population. The peasant and the prince fell alike beneath the arrows of the destroyer. The chief ruler in his great distress had sent for the master. His favorite son had already fallen, and he himself had been accused by the people as the author of the scourge. He therefore prayed the learned man to visit the suffering city and advise what should be done to save, if possible, the remnant of the plague-stricken inhabitants.

In answer to the summons, the physician immediately prepared to leave his pupils, for he had already many such, and enter, as many of his followers have since done, the field of death. He gave a few simple instructions to those best fitted to carry on his work, and at once embarked. On reaching his destination, he found the city in a condition which the graphic pen of her chief historian has made to us so fearfully realistic. His first act was to note carefully the soil and drainage of the parts most severely afflcted. He also investigated the water sources. He studied the climatic conditions, and especially did he carefully note the occupations and habits of the inhabitants. He observed that filth everywhere abounded. While there was great magnificence in the architecture, and the palaces of the rich were in the most wonderful condition of adornment, there was beneath all this opulence of display a reeking hot-bed of foul matter giving off the most disagreeable and offensive odors. Under his advice there was an effort made to purify, as far as possible, the atmosphere. The city was besieged by an enemy, and the thickly crowded metropolis did not present a promising field for sanitary work. In the meantime, the great ruler, broken with his many cares and ill-requited labors, was himself prostrated. The end was soon reached, and the greatest of the Athenians, Pericles, was among the immortals. Hippocrates returned to Cos, there to ponder upon the lesson which had been opened before him in the plague of Athens, and to write his book on "Airs, Waters and Places," the oldest treatise of which we have any knowledge on hygiene or public health. We find stated in it with almost the definiteness of modern sanitary science, the great importance of pure water, as well as some of the diseases which are likely to result from the presence of filth. From the time of the father of medicine to the revival of learnin the fifteenth century, we have but very little progress in the work of saving life. The older doctrines as to the cause of disease, whether among pagan or Christian people, were not encouraging to efforts in this direction. It has, therefore, come to pass that measures looking to the prevention of disease by the use of scientific methods, are modern.

BUT LITTLE DONE DOWN TO RECENT TIMES.

The maxims of Hippocrates, the ceremonial of the Hebrew law as to bathing, and the establishment of quarantines, are almost the only exceptions. For the most part suffering has been regarded as an infliction of the gods, or, among Hebrews and Christians, as a dispensation of Divine Providence. . . .

So long as life and its disorders were made to depend upon the unknowable, but little encouragement could be found, in fact for an effort to prolong the one, or to prevent the other. Even the materialists were content with phenomena, and wearily warred with existing conditions. Slowly with the revolving centuries better notions of the conditions of life have been reached. A better understanding and observation of sanitary laws has been brought about. Gradual changes in the modes of living and larger means of comfort on the part of the people have been accomplished. With all these improvements something has been done towards increasing the length of life. We have, as a race, made some progress, and by surviving we have demonstrated our fitness to survive. We do not know accurately the death-rate in the earlier centuries, but we do know that famine and pestilence carried away its hecatombs. As we come to more recent times we reach some approximation, at least to accuracy. In the seventeenth century, and for some hundreds of years before, the population of England and northwestern Europe had remained, if not stationary, with only a very slow growth. The cities, it is true, increased in population, but this increase could only be appreciated by comparing periods separated by many years. The agricultural districts very slowly became occupied. Life was short

and its product small. After the revival of learning, that great awakening of the sixteenth century, however, life became more valuable, and it was worth while to make a greater effort to save it. In the diaries of individuals and in the writings of medical men, we find some information, meager it is true, but some statements as to the life movements of the dead old centuries.

A few facts in the sanitary, or rather unsanitary, history of London during the seventeenth century, are suggestive of what was frequently taking place over all the then civilized world. These facts also give us a satisfactory explanation for the slow growth of the population of that century as compared with the nineteenth.

In 1625, a writer says: "The plague caused the death of 5,000 a week during a part of the summer." In 1665, July 16, he writes: "There died of the plague in London this week 1,100." In the week following, 2,000. August 8, he writes in his diary, "Died this week in London, 4,000." August 15, the same summer, "There perished this week, 4,000." He seems to have left the city for awhile, for on September 7, he says, "Came home. There perishing nearly 10,000 poor creatures weekly."

Sydenham, a very reliable medical authority, says of the same summer: "There died in one week 8,000, while two-thirds of the population were out of the city." The population is not certainly known, but probably at the time referred to was not more than half a million, as it was only something over 800,000 at the beginning of the present century.

Small-pox also ravaged the cities of Europe in winter, while plague decimated them in summer. In 1695, a reliable writer (Pepys) says, casually, in the discussion of other subjects: "The deaths were from small-pox increased to 500 more this week than last." What should we think in Brooklyn to-day with 500 deaths more this week than last from small-pox, with the probabilities that last week the number had reached into the thousands? But for vaccination, such might be our experience. The same writer comments upon the fearful spectacle in the streets of London. "Almost everyone," he says, "who has survived this scourge, was scarred and pitted by the pestilence and presented the most ghastly appearance." There was no effort to escape it except by flight to the country. It was believed that the epidemic constitution of the air, another unknown and mysterious quantity, made the plague a necessity once, at least, in thirty or forty years. Small-pox was always present and caused the death of one-sixth of the population of all the larger cities. The death-rate was greater than the birth-rate, and the population of London and other cities was maintained by a constant influx from the provincial districts. During all this time, the means of communication were few and *a priori*, we should not expect contagious diseases to spread with anything like the degree of rapidity made possible in this age of railroads and steamships.

ADVANCES IN THE LATER YEARS.

How much the death-rate has been reduced in England in the last two hundred years, we do not certainly know, but there is reason to believe that in London it has diminished from forty or more in the 1,000, at the beginning of the present century, to about one-half that number. The plague is a grim spectre of the dead past. Small-pox is a Samson shorn. The increase in population has been correspondingly rapid. I think we may safely infer that the diminution in the death-rate and the increase in the population throughout Great Britain has borne some proportion, at least, to what has been accomplished in the metropolis. This increase of population has taken place notwithstanding the fact that during the last half century, millions have come from the British Isles to our own shores, while yet other millions have found other homes, and yet the work-shops of Britain are beehives, and the hill-sides of merry old England teem with industrious workers. A great change has been wrought in this last three-quarters of a century. We know much more accurately how long people live, from what causes they die, and at what ages they die. We begin to see more clearly how the death-rate can be still more reduced. If we follow the course of a given number of individuals from birth to death, as we can well do by the aid of statistical tables, we shall find that in England and Wales out of one million persons born, more than one-fourth die in the first five years. If we divide the country into healthy and unhealthy districts, grouping together the different cities and counties according to the death-rate, we find that in the healthy districts only about one-sixth of the million die within this first period of five years, while in the unhealthy districts, of which Manchester may be taken as a type, nearly one-half of the million born, die within the first five years. In other words, of a million of children born in the unhealthy districts, more than 280,000 die within the first five years for the want of proper sanitary care; 280,000 would have lived beyond this five years if they had been born in the healthy districts.

The same startling contrast between the worse and the better districts, will meet us if we study the later life history of this 1,000,000 of human beings.

By coöperation on the part of the people the unhealthy districts might be made as healthy as London, and as the other provincial towns and shires in which the death-rate is so low. In fact, Liverpool has within the last twenty-five

years been transformed. It was one of the most unhealthy, it is now one of the most healthy of English cities. The application of money by scientific methods might change all this, and prevent this fearful slaughter of the innocents. . . .

LEGISLATION BASED UPON KNOWLEDGE.

The other field, and the one to which I more particularly desire to call attention, embraces the problems of public health. Society has always recognized certain evils growing out of aggregation, and has sought to control these evils. By legislative enactment and the establishment of police regulations, an effort has been made to secure the greatest good to the greatest number. Persons and property have been protected, crime has been punished; and mainly with the motive to prevent crime. In these later years the obligation of the public to protect, not only the worldly goods of the citizen, but also his health, begins to be realized. An intelligent foundation has been laid for sanitary reforms. These consist first, in the collection of statistics by which the value of certain proccdures may be determined. The registration of births, deaths and marriages, the causes of death, the collection of information as to prevailing diseases, the collection and preservation of meteorological statistics, the collection and tabulation of statistics of the movements of the people, emigration, the growth of cities and States — all these accumulations serve as material out of which may be developed more accurate knowledge and better methods. Governments begin to recognize a responsibility in these matters. But for the most part, legislation is still crude, and the administration of sanitary laws full of blunders. In this respect the history of sanitary enactments and their execution does not materially differ from that of other social and political reforms. It is the want of accurate knowledge that leads to our mistakes of legislation; the want of practical acquaintance with the methods of administration that leads to the blunders to which we have referred.

As our oldest literature on sanitation was born of the pestilence, so our legislation has been stimulated by epidemics and has for the most part been provisional. Wise legislation must be based upon knowledge, knowledge on the part not only of professional sanitarians, but knowledge on the part of the public. It cannot be expected that this general or public knowledge will be technical; it must be general and related to the results that can be reached by scientific means and methods. A knowledge that begets faith in the agencies of protection and that secures efficient coöperation, and not, as has been too often the case, obstruction in the execution of sanitary laws. There are dangers, however, in this field of work, as in most others, that grow out of a smattering of knowledge. There will always be those who claim too much, who speak as having authority, but have not the wisdom to see the limitations and difficulties in the way of practical results.

While, therefore, we should by all possible means strive to instruct and interest the great public in the work of preventive medicine, the task of devising the means and methods must remain in the hands of those who have special knowledge of these matters. These specialists should not be taken wholly from the profession of medicine. As an illustration of what a layman may do, I have only to mention the name of England's greatest sanitarian, Mr. Edwin Chadwick. Through a long life he has devoted himself to the work of improving the condition of London and other English districts, and it is safe to say that during the last fifty years his services have in value not been excelled by those of any Englishman in even the highest position of official or social life. What we want is on this side of the ocean such men as Mr. Chadwick. If we are to reach that measure of success which we believe to be possible, the world must not be left entirely to the medical profession or to health officers.

The egoism that leads manufacturers and others engaged in the various industrial occupations to ignore, in their eager pursuit of wealth, the public welfare, will always be an obstacle to the enactment and execution of health laws, but this general enlightment on the part of the public which we so confidently look for, will compel obedience to these as well as to other forms of police regulation.

WHAT HAS BEEN DONE IN THE WAY OF LEGISLATION?

It is only within the last few years that sanitary organizations have come to be recognized as a necessary part of the machinery of State. Within the memory of many here present, there was not an efficient board of health in any city or State of this country, or in fact of the world. Police regulations establishing quarantine, it is true, existed, but these quarantines instead of being beneficient in their character, were often useless, and in many instances they became monstrous crimes against humanity. All this is being changed. Society recognizes its obligations in two directions: First, to remove from its midst or destroy every possible source of disease, and to so control the causes that cannot be removed or destroyed as to diminish to a minimum their deleterious influences upon public health. Secondly, the obligation to prevent the introduction of diseases from without, by such measures as shall be found the most efficient for the accomplishment of this end, and at the same time work the least amount of inconvenience to the social and commercial interests of the community.

For the accomplishment of the first purpose we have already done something, but there remains much more to be done. There should be in every town or city or district a health authority. Under the direction of this authority there should be a survey first made with a view to determine the presence or absence of the physical conditions that unfavorably affect health. This study should include not only the natural conditions, such as the climate, soil, exposure to sun and air, neighborhood, including water, wood and elevation, etc., as suggested by Hippocrates many centuries ago, but it should also embrace the condition of the population, their nationality, occupations, dwellings, density and food. It should also show the methods of removal of accumulations and, in the more populous districts, the disposal of sewage, the condition of streets and alleys, and the character of drinking water. There should also be noted any special industries by which air or water may be contaminated. The bearing of most of these different industries upon public health is now well known. In addition to these studies of the surroundings and the activities of the population, there should be a careful collection and preservation of the statistics of births, deaths, marriages, the prevailing diseases, the causes of death, and the increase or decrease, if such be the case, of population. This is only a suggestion of a few things that should be done, and these should be done in the smaller towns and villages, as well as in the larger cities. . . . .

WHAT REMAINS TO BE DONE.

It appears that the death-rate of twenty-six of the principal cities of America, with a population of 9,873,448, is 20 per 1,000, I think it morally certain that this rate could be reduced, by means and methods *now known* to sanitary science, to 16 per 1,000, and probably still less than that. The death-rate for London for the year 1888 was 18.5 per 1,000. This can be still further reduced. That of New York and Brooklyn for the same year, taken together, was 25.5 per 1,000—New York 25.9, Brooklyn 23.7. The death-rate of these two cities, if reduced to that of London, would secure a saving of 7 per 1,000, or, annually, 15,986 lives. These lives are public wealth.

But this is not all. For one death annually two persons are sick during the entire year; or, in other words, there are two years of disabling sickness to one death—31,972 years, in New York and Brooklyn, of sickness, preventable sickness, annually. The value of these years of sickness cannot be reached with accuracy, but the wages lost on account of sickness, the cost of care and maintenance during sickness and convalescence, and the money value of the lives destroyed, considering them only as machines, will in New York and Brooklyn reach annually into the millions. I venture to suggest to the business men of these cities that this loss is enough every year to buy a great railroad, or to build and subsidize a fleet of ocean-going steel steamships.

The sorrow of 16,000 homes, the years of grief, and the 32,000 years annually of anxious watching and waiting over the sick-beds of those who finally recover, are not taken into this estimate. Such considerations do not, except spasmodically, move legislatures or executives. It is only as these touch property, only as epidemics interrupt commerce, that we are able to secure efficient legislation. I firmly believe that the death-rate of nearly all our large cities may be reduced 3 to 4 per 1,000 from the present rate. I am fully satisfied that this might be accomplished in our chief cities, and that sickness might be diminished in a corresponding degree.

This lengthening of years, this relief of distress, this saving of public wealth, is worth working for. What is true of the cities is, to a great extent, true of the rural districts. All over our broad land are farm-houses and small villages which become every year the seat of diseases that grow out of filth. Foul drains, foul water, badly constructed and ill-ventilated dwellings and school-houses are the cause of thousands of deaths every year—deaths that might be prevented by the application of acquired knowledge upon this subject. Sir James Paget, before the London Health Exhibition, discusses the problem of national health, and very conclusively shows that among the wage-earners of England and Wales probably one-fourth of the sickness is preventable. Of the 20,000,000 of weeks lost by about 15,000,000 of the population, 5,000,000 weeks, or more than 95,000 years of work might be saved. This estimate is based upon the population between 15 and 65 years of age. The extension of this computation of sickness to all ages in Great Britain and Ireland would present us with a most startling array of figures. . . . .

Up to the present time these problems of public health have received but little attention at the hands of statesmen; but it is no longer a question of possibilities, it is certain that this great saving of the best kind of public wealth is within our reach. It may not be accomplished by methods hitherto used, but the result is possible by methods that are known and which we know how to adopt. What we want is a recognition of the evil, and a disposition to invest at least a very small percentage of the loss in money value of life and work—wasted life and work—for the purpose of preventing this waste—hardly more than would be paid for the insurance upon our public buildings, or upon our dwellings in proportion to the value of the buildings themselves. . . . .

We do not know with certainty how long life may be prolonged, but we are morally certain that it may be extended much beyond its present

limits, and with a fair degree of usefulness. It is believed that its normal limit is about 100 years. Instead of about 40 years under the most favorable conditions, as at present, it is quite probable that 60 or more years should be attained by the best use of the means now known; that is, the average should be 60 or more years. With a better understanding and more faithful observance of health laws 40 additional years should be reached. This obedience to law, this adjustment of our surroundings and regulation of our whole being, mind and body, in accord with the conditions of physical health, will prove to be the only true elixir of life. . . . .

The future is full of hope. Everywhere science with the microscope and the crucible is following the germs of disease and the agencies of death. Politicians even are beginning to think it is worth while to preserve the lives of their constituents. The great public is beginning to believe that something more potent than fasting and sackcloth can be devised for their protection from pestilence and the grave. Let us all work together and we can do much even now, and in doing what we know how to do we shall find out other ways to do still greater things. So shall we lengthen the cords and strengthen the stakes of the great tent of life, under which the cry of distress and wail of bereavement shall become ever less and less; while in swelling chorus shall be heard, through the ages, the laughing of children, the sweet voices of young men and maidens, and the strong words of old men and matrons.

4 Sixteenth street, Chicago.

ORIGINAL ARTICLES.

THE CURE OF HERNIA BY THE USE OF THE BURIED ANIMAL SUTURE.

Read in the Section of Surgery and Anatomy at the Fortieth Annual Meeting of the American Medical Association held at Newport, R. I., June 25, 1889.

BY HENRY O. MARCY, A.M., M.D., LL.D.,
OF BOSTON.

This paper is offered as a clinical study of operative measures for the cure of hernia. The cases reported represent all the usual varieties and were operated on during the eight months ending with April, 1889.

Case 1.—J. R., aged 45, an invalid for years from a large scrotal tumor. I had twice aspirated a few ounces of bloody fluid. There was also disease of the testicle. From the external ring there was a firm mass the size of the fist, continuous with the scrotal tumor. He had consulted several physicians, including members of the surgical staff of the Massachusetts General Hospital. Diagnosis uncertain, perhaps a malignant tumor; operative measures unadvisable. I operated August 29, 1888, assisted by Dr. S. N. Nelson, of Boston. Removed the diseased testis; opened the hernial sac, which was found to contain only compressed omentum. Its folds were adherent, but were separated into the specimen here shown, which measures 6x8 inches. It was sutured across at its base, freed from adhesions to the internal ring, and divided. The stump was returned within the abdominal cavity. The large peritoneal sac was everywhere closely blended with the external tissues and was dissected with difficulty. It was freed to within the internal ring, well drawn down, and sewed evenly across at its base with five or six continuous sutures. This was excised and the closed peritoneum replaced within the ring. The internal ring was closed with a deep layer of double continuous tendinous sutures. A second layer of sutures was continued in the same manner, approximating the structures external to the pillars of the ring. The scrotal tissues were also closed by layers of buried continuous animal sutures. The skin was approximated subcutaneously by a blind stitch and the wound sealed with iodoform collodion. The operation, as were all of the entire series, was performed under strict antiseptic precautions, including continuous irrigation with a $\frac{1}{2000}$ sublimate solution. The wound healed without suppuration or even in any degree scrotal œdema. The patient was free from pain almost from the first.

At the discussion upon the subject of the cure of hernia in the Surgical Section of the Suffolk District Medical Society, January, 1889, Mr. R. kindly consented to be present and let the result be seen. The wound remains firm to date, the patient has resumed his ordinary occupation, suffers no inconvenience, and has not worn a truss. The sac in the specimen presented is stuffed with cotton and exhibits the peritoneal surface, in order to show the extraordinary changes that occurred in the development of its fibres.

Case 2.—M. H., aged 30, patient of Dr. C. W. Stevens, of Charlestown; is of exceptional physical development, fond of athletics. A large scrotal hernia of the right side, which for a considerable period has been irreducible and painful; incapacitated him at times for any labor. Had previously worn a variety of strong trusses with inability of retention. I operated September 29, 1888; opened sac, which contained an easily reducible loop of intestine and a large mass of compressed adherent omentum. The ring admitted two fingers. The operation was conducted as in case 1, except that, in the closure of the ring, the cord was gently lifted to one side and the internal ring closed from below upward, closely upon the cord at its entrance within the abdominal cavity. This was done in order to restore the obliquity of the canal. The cord was then replaced, and with the same suture the pillars of the ring were closed

down externally upon the cord, quite to the level of the external ring of the opposite side. The patient made a rapid recovery, the tissues uniting by first intention without œdema and almost without pain. Recent examination showed a slight bulging of the right inguinal region, but without opening of the canal. On account of a feeling of weakness and to prevent further yielding of the parts, he has been fitted by Dr. Codman with a light truss, which he wears with comfort.

Case 3.—J. M., age 55, coachman. He had been troubled with a right inguinal hernia for a long time, complicated with hydrocele, for the relief of which he has been frequently tapped; fluid withdrawn at the Massachusetts General Hospital a few days previous to operation, October 4, 1888. He was unable to reduce the hernia, and after two days of severe vomiting, the latter part of which was stercoraceous, he sought surgical aid. Taxis under ether proved unavailing. Assisted by Dr. H. D. Didama, of Syracuse, N. Y., I divided the constricting ring, restored the hernial contents and completed the operation for radical cure. After rallying from the ether the patient was taken in a carriage to his home, where he remained in bed two weeks, almost without attendance, but he made a rapid and painless recovery. He was also exhibited at the meeting of the Suffolk District Society above referred to. Although the hydrocele has twice refilled to inconvenient size, he remains entirely without discomfort from the hernia, has not worn a truss, and is actively at work.

Case 4.—S. N., physician, age 31, upon whom I operated for the cure of an inguinal hernia of the left side in the autumn of 1886, which has remained firm up to the present time. During the summer of 1888 he first noticed a slight bulging of the right side, for the support of which he applied a light truss. Notwithstanding, the hernia rapidly became scrotal and irreducible. I operated October 12, 1888, assisted by Dr. H. D. Didama. The sac was thickened, everywhere adherent, and dissected with difficulty. The loop of the intestine was easily reduced, but a considerable amount of omentum was adherent, and so changed that it was removed. The specimen here presented is interesting because of its rapidity of formation. The patient suffered extremely from pain in the back on account of confinement to the bed. For this reason he was allowed to sit in a reclining chair each day after the first, and in two weeks from the operation walked a quarter of a mile without inconvenience. The side feels perfectly firm at date. He has not worn a truss.

Case 5.—Mrs. J., age 40, entered private hospital on account of ruptured cervix and perineum. She had suffered also for years from a femoral hernia of the right side, easily reducible, but which was imperfectly retained with a truss. In addition to the operations for repair of cervix and the perineum, I removed the hernial sac December 3, 1888, which is here exhibited. The recovery was rapid without any unfavorable symptoms and the patient remains cured at date.

Case 6.—G. S., age 40. The general health of the patient excellent, but for years he has been incapacitated for active labor because of a large left inguinal hernia, complicated with a varicocele. The scrotal tumor is so large as to extend at times quite one-third to the knee. The hernial tumor is imperfectly retained by a truss, the pressure of which causes pain by impeding the venous outflow. Assisted by Dr. H. D. Didama, of Syracuse, N. Y., I operated December 4, 1888. In addition to the operation for the radical cure of the hernia I dissected and tied the veins of the scrotum in three different places, some of which were varicosed to the size of the little finger. The wounds healed without œdema or suppuration, but the scrotum remained somewhat tender to pressure, and the patient still wears a suspensory bandage. The patient remained in the hospital three weeks and was discharged cured. No return of or inconvenience from the hernia, and no truss has been worn. Is actively at work.

Case 7.—Mrs. J. S., age 43. For many years has suffered from a right femoral hernia, for which she had worn a truss. For the last year she had noticed a tumor in the groin, something larger than a hen's egg. At times it is painful and always a source of discomfort, is slightly tender to the touch, and does not diminish under pressure. Femoral canal admits the tip of the little finger. Operation performed January 2, 1889. Sac contained clear serum and was continuous above through the femoral canal with the peritoneum, but its cavity had been obliterated under the pressure of the truss, thus reducing it to the characteristics of a simple cyst. This I removed and closed the ring. Rapid primary union followed, and the cure remains complete without support. Specimen exhibited shows the intimate adhesion of the sac to the surrounding tissues.

Case 8.—Mrs. B., age 34. Has for a long time been a semi-invalid from a right femoral hernia, for which she has worn a truss. In preparation for moving she lifted more than usual, causing the descent of the hernial tumor, which immediately produced great suffering, with faintness and vomiting. The physician summoned to her relief attempted the reduction of the tumor by taxis, which he continued more than an hour. His efforts proved unavailing and he left the patient with directions to use opiates and hot fomentations. I was summoned twenty-four hours later, January 31, 1889. At once I removed her to hospital, etherized and operated. The ring was divided with difficulty and several inches of congested

intestine liberated and returned. The patient made an excellent recovery, although between three and four months pregnant at the time of operation. She remains cured at date, although nearing her delivery. She has not worn a truss. The sac here exhibited shows the constriction of the neck, through which a piece of rubber tubing has been passed.

Case 9.—Strangulated umbilical hernia, five days' duration; patient of Dr. J. H. Parks, of East Boston. Case came under his observation only a few hours prior to his sending for me in consultation. Stout Irish woman, aged about 50. For some years had suffered from an umbilical hernia, double fist's size, a portion of which for a considerable period had been irreducible. Stercoraceous vomiting had continued for two days. Operation considered permissible, although the result would be doubtful. The thin-walled integuments covering the tumor were sphacelated. The hernial contents were found to consist of a large mass of adherent omentum, within which a considerable loop of small intestine was incarcerated. The constriction was easily divided, but the intestine was gangrenous and tore asunder under gentle traction. The ends were brought out from the wound, resected, and coaptation affected by means of a double row of continuous Lembert sutures. These were easily and rapidly applied and the divided mesentery united in continuous suture. The parts were well washed with hot sublimate and returned within the abdomen. The hernial sac was resected and the abdominal wall closed in layers by continuous tendon suturing, as after an ordinary laparotomy. When partially recovered from ether regurgitating vomiting occurred, several pints of dirty fluid, which was so continuous as to impede respiration and, despite all efforts, proved the cause of death. In order to anticipate such a possible accident it had been the intention to wash out the stomach prior to etherization, but in the hasty preparation the stomach tube had been unfortunately forgotten.

Case 10.—I. J,, aged 75. Strangulated left inguinal hernia. Retired sea captain; general health good. Has for years suffered with double inguinal hernia, imperfectly retained by a truss. About four weeks prior to operation the left hernia became strangulated and, under ether, was reduced with difficulty. I was summoned shortly after the strangulation occurred. Failing in taxis I operated at once, March 7, 1889, assisted by Drs. Nelson and Cook. The tumor was double fist size and reduction was effected only after a wide division upward of the constricting ring. The sac contained about fifteen inches of small intestine, closely adherent by lymph exudation, probably dating from the strangulation of four weeks previous. Adhesions broken down prior to the return of the intestine into the abdomen. Vomiting ensued soon after the close of the operation, and insufflation of a portion of the liquid contents into the bronchi well nigh caused death. Acute pneumonia supervened, which caused the greatest anxiety for the two subsequent weeks. Although the strain from coughing was severe, the sutures did not yield, and yet, ten days after the operation, a considerable portion of devitalized, broken-down tissue was exfoliated. Repair went on satisfactorily by granulation, although the recovery was necessarily protracted. A considerable depression marks the site of the wound, but the abdominal wall is firm and unyielding. The patient is actively about, wearing a truss to support the opposite side. The accompanying specimen shows the everted sac stuffed with cotton and nearly fills a quart jar. The peritoneum affords an interesting study.

Case 11.—Mrs. P. Right femoral hernia. I operated upon the lacerated cervix and restored the perineum at the same sitting, April 17, 1889. Recovery rapidly followed, the patient apparently suffering little or nothing more from multiplicity of operations. Union in each primary. Specimen exhibits an interesting condition of the changed peritoneum. The patient returned home, several hundred miles distant, at the expiration of three weeks, and reports condition satisfactory.

Case 12.—Right scrotal hernia. Patient aged about 60, inmate of the Soldiers' Home at Chelsea because of this disability. Operated upon by Dr. Nelson and myself April 10, 1889. Sac everywhere adherent. Dissected with difficulty. Obliquity of canal restored. Recovery slow, but result reported as satisfactory. The accompanying specimen exhibits the peritoneal sac most remarkably reënforced by interlacing bands of hypertrophied connective tissue.

Case 13.—Right femoral hernia. Female aged 27; seamstress. Hernia retained imperfectly by a truss. Disability and suffering very pronounced. Operation April 27, 1889. Recovery rapid; discharged from the hospital at the close of the second week, and she has resumed her ordinary occupation.

Case 14.—Miss N. C., aged 28. Large ventral hernia. In August, 1886, I removed a multiple ovarian cystoma weighing about 30 pounds. Incision was 3 inches in length. Wound closed by interrupted sutures taken through the entire thickness of the abdominal wall. Following the recovery the patient rapidly gained 40 pounds in weight. Ventral tumor at time of operation, May 10, 1889, nearly the size of an adult head. Resected the sac and closed the abdominal wall by continuous tendon sutures in four layers, the skin with blind stitch. Sealed the wound with iodoform collodion, as in all the previous cases. Patient made rapid recovery and was discharged from the hospital in two weeks, wearing an abdominal support. The specimen of the cyst

shown, exhibits remarkable diverticuli. The lower portion of the sac was filled with a mass of adherent omentum.

The series of cases reported above, operated upon within eight months, include all the usual varieties of hernia. They complete a list of operations, now numbering nearly 100, which I have performed during the last eighteen years. The method followed, from the first, has been subject substantially to the same factorage, although varying somewhat in detail.

Since I have recently given to the profession my views upon the conditions, symptoms and treatment of hernia at length,[1] I shall limit myself in this paper to a brief discussion of what I deem to be the essentials of the operation for the cure of hernia. I do this with the greater interest and pleasure since the cure of hernia is confessedly an opprobium of surgery, and it is not until a very recent date that surgeons in either Europe or America have been willing to discuss seriously the advantages to be derived from operation.

In 1878 I first reported to this Association my method, illustrated by a series of cases with specimens, which have been supplemented, from time to time, by further contributions until the present. The basic and fundamental factor consists in closing the divided and weakened structures by strong sewing with a carefully prepared animal suture after the removal of the sac. This is aseptically applied and approximates the refreshened tissues by layers of buried suturing, so as to avoid the necessity of drainage, and thus allows of the complete closure of the wound, hermetically sealed with iodoform collodion, a very simple, but germ-proof dressing. I first published it in the *Boston Med. and Surg. Jour.* in 1871. My first case thus operated upon was in 1870. In this case the use of the buried suture was accidental and applied to serve a temporary purpose, but a permanent cure resulted. After mature deliberation I judged it sound surgical practice thus to attempt the cure of hernia, and other equally successful cases thus treated soon followed, the first fruits of my personal instruction received from Prof. Lister in Edinburgh, in 1869. He had limited his studies at that time to the results of the ligation of arteries by catgut left buried in the wound. I extended the use of the catgut ligature to the approximation of tissues, and made a series of experimental studies in animals upon the changes in the tissues which ensued. I determined that, when properly prepared, if aseptically applied, they were slowly replaced by bands of living connective tissue, and thus served an important purpose in the reënforcement and strengthening of the parts involved. The use of the suture thus applied to hernia, is naturally of very great value for the approximation and retention of all wounded surfaces. In aseptic wounds it now promises to do away entirely with drainage and the multiplicity of antiseptic surgical dressings.

Under the new régime of surgery, in competent hands, the claim for operative measures for the cure of hernia may be strongly made:

First.—It is eminently a safe operation. In my own experience, extending through all these years, in all cases operated upon where the integrity of the intestine was not involved, I have not had a fatal case, or one where it appeared that even the danger line was in any way approached. In my recent work upon hernia above referred to I have collated, as far as possible, all the reported cases of operation under aseptic precautions. From the reports of recent operators I find 779 cases of hernia which have been operated on for a variety of causes, with only five deaths, and these are explained as having resulted from conditions not referable to the operation. This contrasts so extraordinarily with the earlier experience of the profession, when, usually, all hernial operations were septic and peritoneal infection the rule, often followed with fatal issue, that the modern operation for hernia may be claimed as one of the greatest triumphs of aseptic surgery.

Secondly.—The results of the attempt at radical cure are almost equally surprising. I have found it quite impossible to trace the subsequent history of every patient, but recent investigation shows that of those of whose histories I have a knowledge fully 90 per cent. are permanently cured, and in no instance do I advise the subsequent wearing of a truss. The essentials of my operation are briefly as follows:

The hernial sac is opened, its contents restored to the abdomen, or removed, and it is freely dissected to its very base within the ring. The sac is then drawn down, sewed across with an even continuous double suture, resected and removed. The peritoneum is then carried quite within the ring. (Fig. 1.) In large direct inguinal hernia it is important to restore the obliquity of the canal, nature's wise provision for maintaining the closure of the canal by intra-abdominal pressure in health.

This is effected by commencing at the lower and inner border of the ring, the cord having been gently laid to one side, and closing by double suturing quite to the inner opening of the ring upon the cord, which is now replaced, and the external pillars of the ring are closed by similar suture downward and inward to the pubic tubercle. The inguinal rings are thus reformed and the canal is restored to its normal oblique position. (Fig. 2.) If the tissues are sufficiently thick to warrant it, a further layer of animal suturing completes the closure, and the skin is neatly and accurately approximated by a blind running

[1] "A Treatise on Hernia. The Radical Cure by the Use of the Buried Antiseptic Animal Suture." 1889. G. S. Davis, Detroit, Mich.

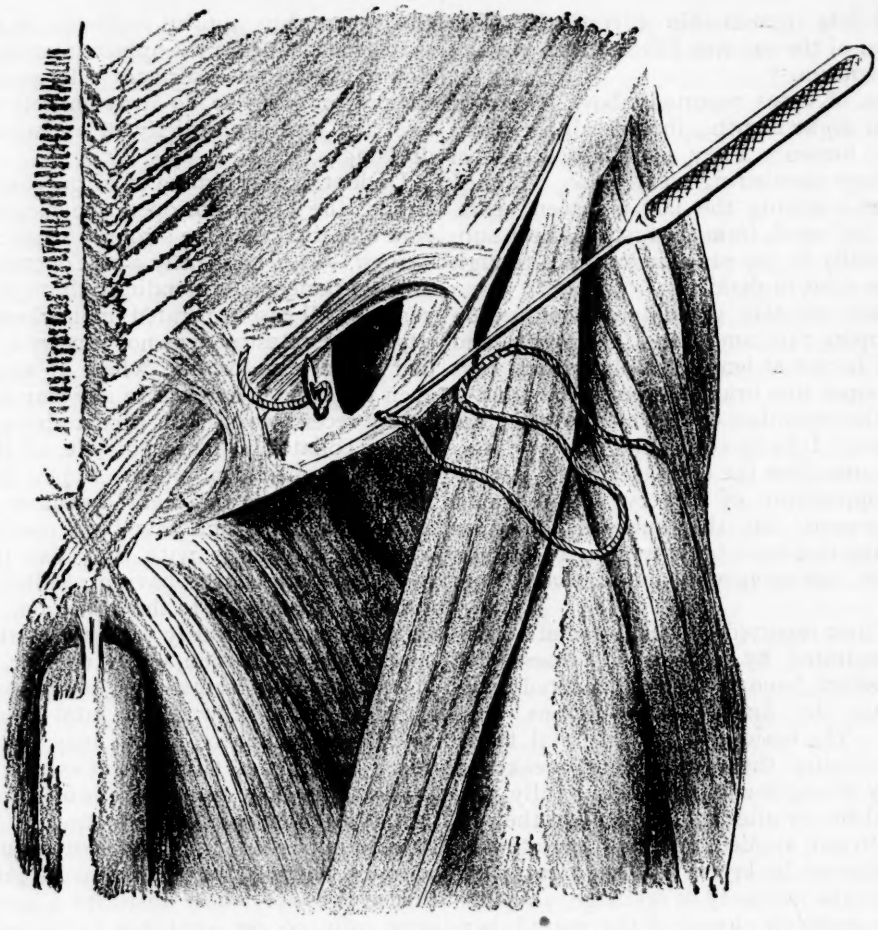


FIGURE I.—Represents the introduction of the first stitch, taken to close the ring from below upwards in order to restore the obliquity of the canal.

stitch, perhaps best applied with a fine Hagerdorn needle, taken through from side to side, including only the deeper layer of the skin. This completes the closure of the wound, each step of which is done under irrigation with a weak sublimate solution, and without the vestige of a stitch in sight. The incision is now dried, dusted with iodoform and covered with iodoform collodion, into which a few fibres of cotton are incorporated. No further dressing is necessary.

Femoral hernia is treated essentially in the same manner. Here it is necessary, after the removal of the sac, to close the ring. Protect the femoral vessels in their sheath by pressing them gently outwards, and introduce the needle, as directed in inguinal hernia, from below, through the falciform process, the fascia lata, avoiding the internal saphenous vein, upwards through Poupart's ligament, withdrawing the opposite end of the suture with the needle. (Fig. 3.) A second stitch is taken through the same tissue, parallel to the first, about one-fourth of an inch nearer the median line. The third stitch is introduced through the *pubic* portion of the fascia lata, parallel to the saphenous vein, and is carried upwards to include Gimbernat's ligament, or its divided fibres if cut in strangulation. (Fig. 4.) A fourth, and as many more stitches as may be required to close the saphenous opening, is carried below and parallel to Poupart's ligament, through the pubic fascia and falciform fascia. In this way the peritoneal pouch is obliterated and the neck of the sac firmly closed.

The folding over of the fascia carries the saphenous opening quite a little to the inner side of its former site, while the femoral vessels are undisturbed in their sheath. (Fig. 5.) The superficial tissue and skin are closely held in conjunction by buried continuous animal sutures and the wound dressed with iodoform collodion, as advised in inguinal hernia.

If the cure of hernia is to be attempted under modern surgical methods, most surgeons will readily admit that it should be by a free dissection, or the open wound method, under rigid antiseptic precautions. Modern operators are divided in opinion as to the treatment of the sac. All are determined that it must in some way be

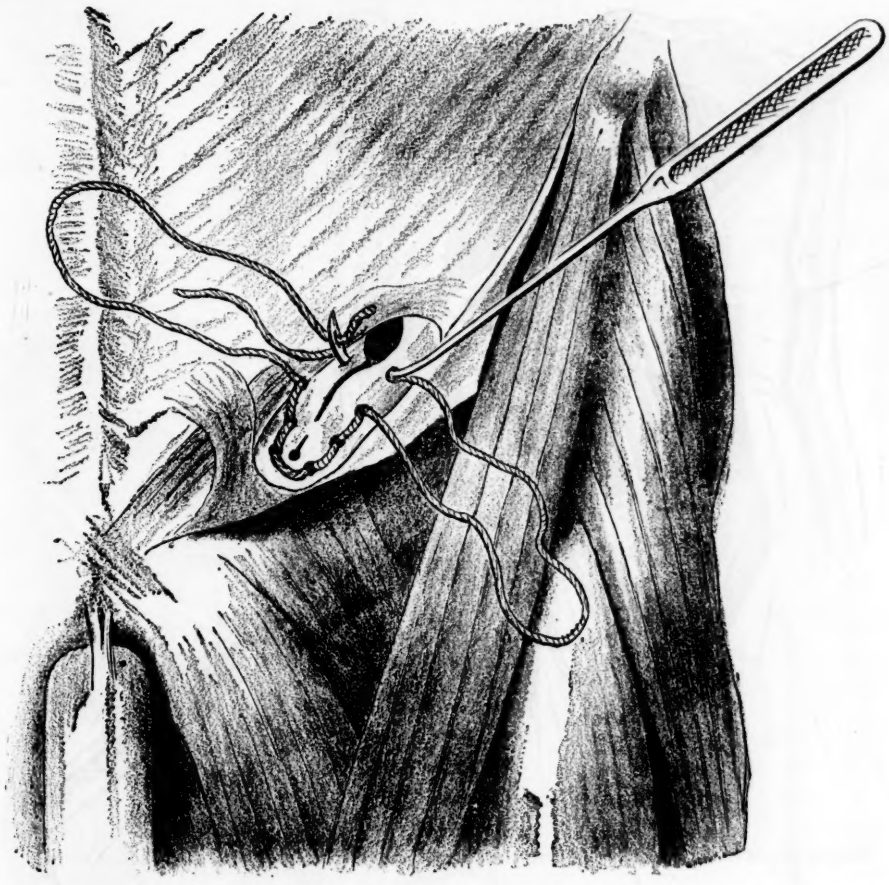


FIGURE II.—The internal ring closed. The completion of the last deep stitch of the double continuous suture.

disposed of. Most advise ligation at its base and removal. Mr. Ball, of Liverpool, and his followers, twist it firmly upon itself, in order to render tense the peritoneum of the abdominal wall before ligation. Mr. MacEwen, on the contrary, whose brilliant results challenge admiration, advises the careful dissection of the sac, folding it back upon itself by a running catgut suture and then, with a needle with eye near the point carried through the peritoneum above the internal ring, the whole sac, puckered into folds, is drawn within to serve, as he thinks, as a buttress for the further protection of the internal ring. The advantages of this method are probably theoretic rather than real. The use of the sac as a plug to close the ring, there sutured and retained, has very generally been abandoned as unsatisfactory. Utilized as proposed by Mr. MacEwen, if it forms a buttress, as supposed, to receive the intestinal impulse, may it not be equally inferred that it would be likely to act as a wedge to press unevenly against the newly formed tissues of the restored canal, and thereby cause harm rather than serve as a deflector of pressure? Although the peritoneum forms a pouch or pocket surrounding the hernial contents, nature did not intend it to serve as a part of the supporting abdominal wall, but by an even elastic, smooth surface lining the firm muscular and tendinous structures to allow the abdominal contents to glide easily and evenly in every direction. As will be seen by the specimens exhibited, in a very considerable number of cases of old hernia, the disposition of the sac, as advised by Mr. Macewen, would be quite impossible. In illustration in Case 10, where the sac is nearly the size of a child's head at birth. Again, also, the sac is so intimately blended with the surrounding tissues that, with all due care in dissection, it is so devitalized and injured that, even if aseptically restored within the internal ring, its presence could furnish only a doubtful factor toward the subsequent repair of the parts. On the other hand, not seldom, especially in children, the sac is so thin and unimportant that it may often be comparatively immaterial in what way it is treated.

Normally the internal ring is ovate, and in closing the sac at its mouth it is doubtless better to do this in the direction of its longer diameter, which gives as the resultant a smooth rather than a puckered peritoneum, in the largest degree vitalized and resilient, freely movable upon its exteri-

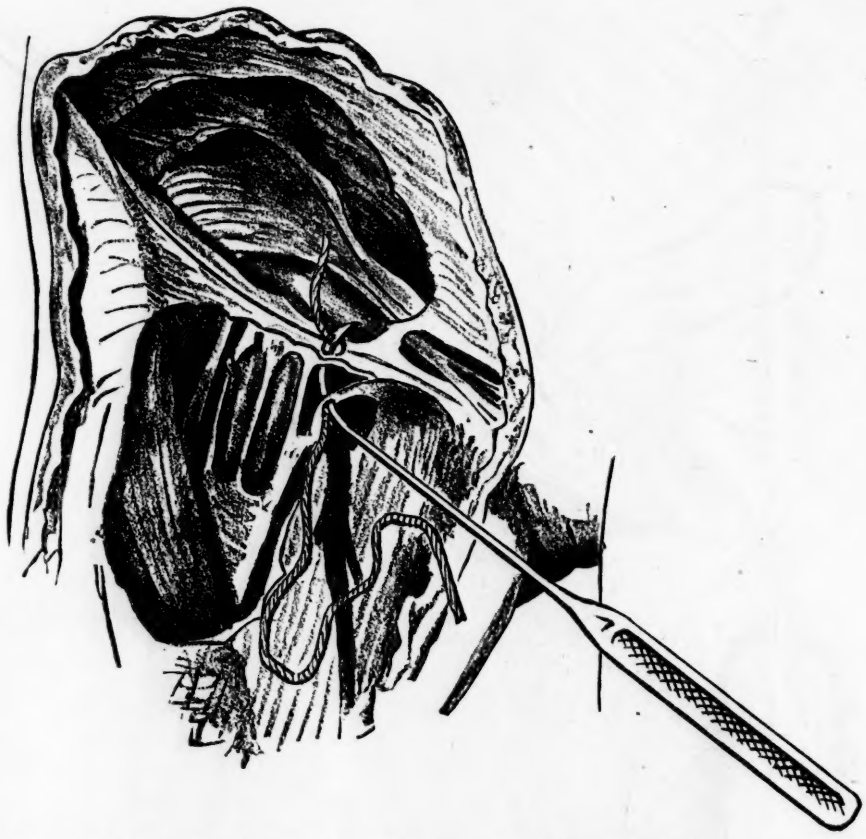


FIGURE III.—Femoral hernia. The first stitch taken parallel to the vein for closing the crural ring.

orly loosely attached fascia. In the attempt at this normal restoration no method, theoretical at least, is equal to that of closing the mouth of the sac in continuous seam. Good results, however, follow all the various ways for the obliteration of the mouth of the sac at the internal ring. The method of sewing may be in considerable variety. The simple over and over stitch will give good results. I cannot doubt. however, that the closure of the canal and abdominal wall by my method of suturing with double stitch has certain marked advantages. It is equally simple in application and carries a double thread, like the shoemaker's stitch, from opposite directions, through the same opening. The approximation of the tissues thereby is even and uniform, and necessarily nothing can escape its grasp. The continuity of stitch renders equable pressure, an important gain over the interrupted suture, while a single knot only is required. It is necessary to use a needle with the eye near the point, which must also be in considerable curve. To avoid unnecessary multiplicity of instruments, I have had the larger size of Hagedorn needle drilled with eye near the point, which serves a very good purpose. It is, however, more convenient to have the needle set in a firm handle as here exhibited, and I have found a certain advantage in continuing each end of the eye in a narrow slot in order to catch and hold the thread from slipping. (Fig. 6.) Well prepared catgut may be safely used in this operation, however, I cannot doubt that the tendon suture, especially that prepared from the tail of the kangaroo, is in every way greatly superior.

When to operate is a subject of the greatest interest, but the limit of this paper must necessarily debar its discussion. Judged from my own experience, the operation is permissible in the very large proportion of all the sufferers from hernia. There is much to be said in favor of operation upon children. Certainly in adults all hernia imperfectly controlled by a truss should be carefully considered from the view of the advisability of operation. In the old large hernia, irreducible in great measure, rendering the sufferer incapacitated for all active pursuits, the operation should be advised.

Adherent omentum is likely to be so much changed as to render its return to the abdominal cavity ill-advised, but the removal of it appears to add little to the danger of the operation. Age *per se* should not debar operation. I have myself operated upon one child of 16 months who, after recovery from ether, gave little evidence of any discomfort. Several of my patients

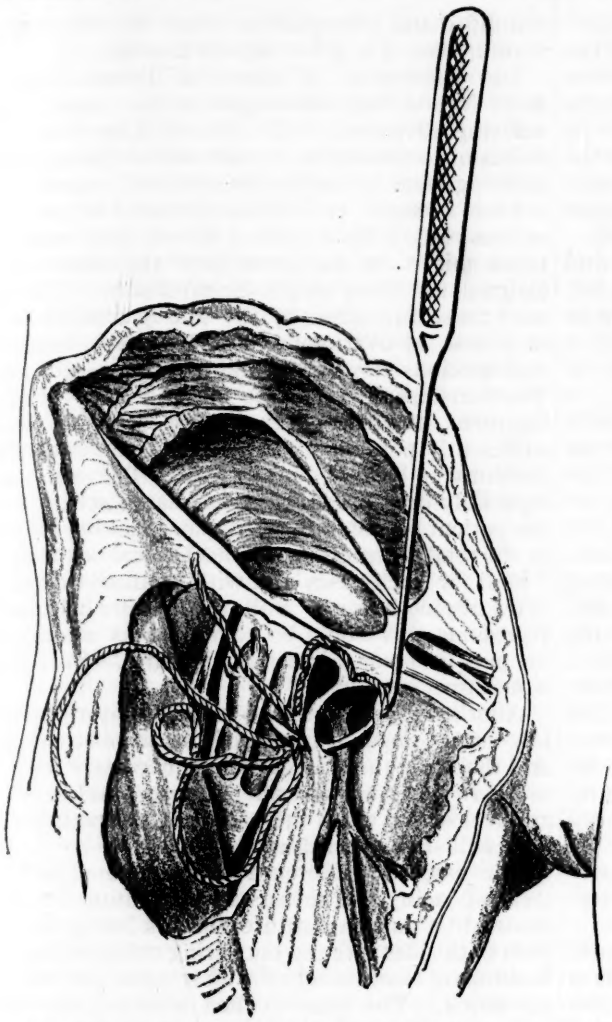


FIGURE IV.—Femoral hernia, showing a third stitch taken for closing of the canal by the use of the double continuous tendon suture. The stitches are represented as loosely drawn in order to show the method of suturing. The needle is passed through the firm pubic fascia and the outer border of the saphenous opening, and when drawn closely will fold the latter inwards.

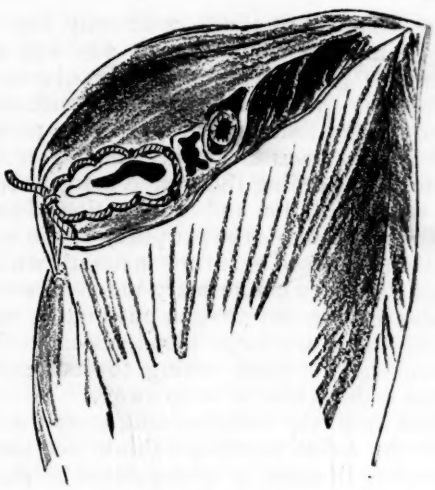


FIGURE V.—Shows the internal ring closed by the double continuous tendon suture. Stitches loose to show method of suturing.

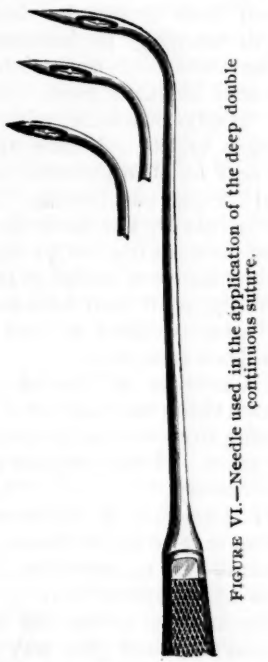


FIGURE VI.—Needle used in the application of the deep double continuous suture.

have been past 70. My friend Dr. L. S. Pilcher, of Brooklyn, has twice operated, followed with complete cure, upon patients, each over 80 years of age. Dr. John H. Mackie, of New Bedford, writes me: "I operated on a man aged 83, right inguinal hernia, strangulated; recovery perfect, but one year later I operated on the same man for left strangulated hernia and he made a good recovery, living several years."

The advisability of operation in any given patient is always to be seriously considered as an independent problem, the factorage of which must consist of many individual details. There is little question that the large percentage of sufferers from hernia will profit from the surgery of the near future whom the conservative surgeon of to-day conscientiously relegates to the truss bearing army of invalids.

DR. T. H. MANLEY, of New York City: With reference to Dr. Marcy's paper there are a few points on which I wish to make a few comments. They are briefly, first, that the method described and practiced by him is no open method at all, and has no claim to any such designation. The next is, that though Dr. Marcy has fair results, there has been no mention of the operation of Dr. Chas. McBurney, of New York, which is the *only*, *real* open method applied in the operations of hernia. By this method McBurney has now operated

more than forty times, with only one death—which had no connection in any way with the operative procedures—and with only one return of hernia. McBurney, instead of endeavoring to secure immediate union, purposely prevents it, and always *aims at* healing the furrow from the bottom, by keeping the wound margins separated till the granulation and cicatrization of tissue has progressed towards the periphery of the wound.

With reference to suture material, while I find catgut useful when primary union is sought for, where there is any tension put on the suture or where there are large blood-vessels to close, it should not be used, owing to its tendency to either disintegrate, or strip away.

The ideal, the simplest and, *every way* considered the safest method, I think, yet known for operating in cases of strangulated hernia, is McBurney's. Here, every time, we can promise *permanent* cure, if the patient survive operation. But he must be operated on early. General practitioners, when they encounter hernia resisting taxis, and threatening to become constricted, should advise *immediate* operation provided the patient's general health is good. He can effect a radical and speedy cure here, which in itself entails no danger to life. I have applied the McBurney method in strangulated cases. I have operated during the past spring three times for strangulated hernia by the open method; two recovering and one dying, who was practically moribund when he went under ether.

Both surviving, with their hernias permanently closed, and being confined to bed only twenty-eight days in each instance.

DR. J. O. WHITNEY, of Pawtucket, R. I., said there is no such thing as congenital hernia. It is due to straining from crying, or at urination with adherent prepuce. If the prepuce be split up no trusses are necessary.

DR. H. D. DIDAMA, of Syracuse, N. Y., had been present at several of Dr. Marcy's operations. The performance was as described by him. The stitching was so complete that a return of the hernia was impossible unless the tendon should be absorbed too soon and give way. But his experience has proved to him and should satisfy us that this tendon never gives way, and that we need not lie awake fearing any bad result from this source. He uses no drainage whatever and never needs any. He never removes a suture because none ever appears on the surface of the skin. There are never any stitch abscesses which are so common in laparotomies performed by sewing through the entire thickness of the abdominal walls.

Dr. Marcy's operation does not confine the patient to the bed for a long time, sometimes not more than two or three days, and there is no pain in any considerable number of cases, and not even inconvenience. His operation seems simplicity simplified and a temptation to any one who has a hernia, even if it gives him no trouble.

DR. JOSEPH H. WARREN, of Boston, Mass., said: While I endorse in general the operation of suturing advocated by Dr. Marcy, I have certain points of technique in my own method essentially differing from his method which I will mention.

I am aware of the claims advanced for animal sutures, but I have always feared their advantages might be too great and the absorption claimed for them might be premature. I have used those furnished by Dr. Marcy himself first in a case of ovariotomy, and I passed sleepless and anxious days and nights in consequence. The constant dread of the melting away of the ligatures, although perhaps not probable, was sufficiently possible to give me no rest until the patient was beyond doubt cured. The case was especially dangerous, as acute mania set in and the patient persisted in tossing and kicking about, to the total destruction of a mechanical bed which I used for such cases and with imminent danger of destroying herself. Still, the ligature held, and I presume this would be construed as a success by one in favor of animal ligatures. Still the uncertainty remains.

Another objection to the animal ligature is the large size compared to silk of the same strength, and the consequent large needle necessary for its use. In my own operations I use braided silk, and feel secure when the parts are approximated they will stay so until united.

The essential difference in my method is the style of lacing. The sac and omentum are included in a gathered suture, the silk being run in from both sides like the puckering string of a bag. Redundant tissue is cut off with scissors just below the stitch. The mass is then returned, the two ends of the suture being left outside and the mass drawn down by them to the internal surface of the ring. A series of stitches is taken in the edges of the ring, each suture being interrupted, all passing each other at the centre, forming a multiple cross or star-shaped plan. This is the first stage. After this I insert a series of stitches superimposed upon the first, each stitch being taken some distance back from the edge of the ring, the stitch not passing entirely through the muscular walls but entering the surface, passing backward and coming out beyond the point of entrance about ¼ inch. These stitches are tied sufficiently tight to pucker the tissues and infold the muscular tissue at the site of the ring. This results in a raised cicatrix, the elevation pointing toward the abdominal cavity and rendering a recurrence of the hernia at that spot less likely, whereas in the plain lacing of the tissue a depressed scar results which offers a constant *point d'appui* for the intestines to work against, and sooner or later may allow the entrance of the wedge and consequently rupture.

This reduplication of tissue also gives a larger uniting surface, the edges and contiguous surfaces being freshened that adhesion may more readily take place. This freshening is most completely done with scissors or scraping rather than with a sharp scalpel, it being my experience in special and general surgery that torn or roughly dressed tissues heal more readily than those cut with sharp, keen scalpels. My preference for the fingers or tearing instruments in place of sharp instruments is founded on good results obtained by this method, and this is especially the case in the cutting of arteries and veins. When put on the stretch and thus severed the vessel is closed so effectually that in my own practice I have never had a case of secondary hæmorrhage, and the primary loss of blood is very slight.

At one time I advocated the use of the galvanocautery in securing a consolidation of the hernial rings. Several cases were successfully treated by this method, and should a very large hernia with weak walls present itself I think I should still prefer this method. The adhesive and contractile power of a burn is well known, and it is as powerful in the hernial rings as elsewhere.

In ordinary cases the freshening and lacing is sufficient. In the majority of cases I still adhere to the subcutaneous injection, and in selected cases, those of good physique and where the hernia is small and of recent occurrence, I still have good results, a ratio of 96 per cent. Its failure in the hands of some operators is not due to the operation. It is due to the selection of cases in the first place that ought never to have been attempted; and secondly it is due to non-observance of minor matters of technique. While I have given its description in the plainest manner possible, I am convinced that there are elements of technique which can be caught only by intuition or careful clinical instruction. The fact that it is practiced by advertising specialists with advantage to the patient and pecuniarily to themselves, and that they claim to have license from me (a claim not founded on fact), proves that there is some good in it.

My name has unfortunately become so firmly united with the operation by injection that many think I advocate no other method and practice no other part of the profession. This is untrue in both cases. My motto is to choose the best for the case in hand, and I would not for a moment be prejudiced in favor of any pet method to the prejudice of the case. The case in all its details determines my method of procedure.

Dr. H. J. Herrick, of Cleveland, O., said: I have taken much interest in the papers presented looking to the relief of this distressing and frequent danger to which so many are subject. Most of the cases reported are of those which have come under the care of the surgeon when the emergency was upon them. In this connection I desire to call attention to that large class of cases in which the hernial tumor is so large and the opening so patent that strangulation is not and is not liable to be present, but, on account of the size and inconvenience as well as danger of inflammation, life becomes intolerable except as it may be devoted to nursing this as yet almost hopeless infirmity.

Have we not a duty towards this class of sufferers? In illustration of the points indicated I will mention the following cases: A young man 28 years of age came to me from a neighboring city with a double scrotal hernia each side of which was the size of the two fists, the openings so great that the gut could not be retained with any appliance. Patient was anxious for matrimony and the business of life, yet with the existing deformity could not. I advised an operation for the radical cure. Not being satisfied with any of the concealed, obscure and empirical means that had been devised, I proposed an open radical operation, which I made upon both sides at the same operation. With antiseptic precautions I made an incision along the neck of the sac 3 inches in length, dissected my way to the sac, emptied it of its contents, at the same time drawing it out. Holding the empty pouch I applied a temporized clamp made by the handle of a dressing forceps closely to the neck, then amputated the sac near the clamp, leaving space for the closing of the neck with a continuous suture, with care to bring the edges of the amputated sac in apposition. The ligature used was the iron dyed silk. Thus the peritoneal cavity was kept closed from the entrance of air, fluid or any septic material. The edges of the ring were made bare and brought together with an interrupted suture of the same material. In the same way I brought together the divided parts of the deep fascia, also superficial fascia and connective tissue and finally the integument, taking special care to leave no contused or lacerated fibres, remove all clots and bring together gently in apposition all the divided parts. No drainage tube was used. Antiseptic dressing was made. The case proceeded to recovery with no unfavorable symptoms, temperature having reached only 100°. In two weeks' time the wounds were entirely healed, with no suppuration. After three weeks, patient returned to his home, since which time he has pursued his former plans of matrimony and business with no return of the hernia. About two months ago a woman with an inguinal hernia of the left side came to me. The tumor was the size of the two fists and involved the left labia, which was very greatly distended and tumefied. It could not be retained by truss, and being required to gain her living by work she expressed the feeling that she would rather die than endure the suffering and care necessary. I advised the open operation for radical cure, to which she con-

sented. The operation was performed two months later in substantially the same manner as in the previous case. The large pouch of the labia was treated antiseptically with a bichloride solution, with the expectation that no suppuration would occur. Owing to its size, tumefaction and inelastic structure suppuration followed and came near destroying the hopes in the case. The inflammation did not extend to the line of deep incision, but was limited to the pouch of the labia, which being opened freely, cleansed and washed with sol. carbolic acid, inflammation subsided and all dangerous symptoms subsided, so that patient before I left home was up, parts perfectly healed, and discharged from the hospital apparently well. It is too early at present to speak assuredly of the absolute success of the operation, though all appearances at present justify the fullest hopes.

I used in this last operation the clamp used for the treatment of hæmorrhoids and found it a most appropriate instrument. By reason of the handle it enabled the assistant to hold the part in the most convenient way for suturing, and the thumb screw enables the surgeon to regulate the pressure to be applied so cautiously as not to endanger the integrity of the parts.

Feeling that the profession has a new duty to perform to this class of unfortunates, these cases in this connection may not be amiss.

DR. MARCY, in closing the discussion, said that the large number present at this late hour (nearly midnight) shows the interest which American surgeons have in the subject under debate. He would detain the members but a few moments, although many points of both interest and profit had been alluded to only briefly. He would ask a critical examination of the specimens of the peritoneal sac which he had been to the trouble of bringing, since they showed important pathological changes which appeared recently to have been, in a large measure, overlooked. They are of the first importance to understand if we are to utilize the sac by any method of surgical procedure. Cloquet, in his masterly work, emphasized the great changes which the sac in old herniæ usually presented. Dr. Manley evidently entirely misunderstood the use Dr. Marcy made of the words open wound. This was in contradistinction to subcutaneous methods of treatment, as by the yet too generally accepted plan of Dr. Wood of subcutaneous closure by the wire suture, or the methods of cure by injection. He was quite familiar with Dr. McBurney's operation, and had only recently carefully reviewed his method, showing what he thought were primal faults. Elsewhere, in all parts of the body, the aim of modern surgeons was to secure primary union, and it would indeed be strange if a hernial wound should prove an exception. Why not adopt this plan in the closure of all laparotomies, if so greatly to be preferred. Dr. McBurney's method has found advocates chiefly because the hernial wounds, as ordinarily dressed, are very liable to become infected. Dr. Warren has referred to the large size of the animal suture, as compared with silk, which is necessary to be used. This, in a measure, is true if catgut is used, but does not apply to tendon. On the contrary, the tendon suture, the size of silk, is very much stronger, as may be tested by the samples here shown. Dr. Pancoast has just made an eloquent plea for the use of his iron-dyed silk. However he, with most others, admits that it generally must be removed. At the best, silk is encapsuled, while the aseptic animal suture is replaced by bonds of living connective tissue cells. Upon this fact, long since demonstrated, is based, in a large measure, the method here advocated, and it is not too much to believe that the profession will early accept the great gain resulting from the use of the aseptic animal suture in the coaptation of all aseptic operative wounds.

Blind surgery is bad surgery. As advocated, each step of the operation is directed by seeing the exact condition of the parts. The reformed peritoneum is carried within the firm tissues of the abdominal wall. The inguinal canal is reformed. The refreshed pillars of the ring are closed in even continuous suture. The coaptated skin is covered by a layer of germ-proof iodoform collodion. The wound, if aseptic, remains so, and Dr. Warren may rest undisturbed by dreams or visions of discontent, while the patient in security goes on to rapid convalescence.

A PLEA IN FAVOR OF EARLY LAPAROTOMY FOR CATARRHAL AND ULCERATIVE APPENDICITIS, WITH THE REPORT OF TWO CASES.

BY N. SENN, M.D., PH.D.,

OF MILWAUKEE, WIS. PROFESSOR PRINCIPLES OF SURGERY AND SURGICAL PATHOLOGY IN THE RUSH MEDICAL COLLEGE, CHICAGO, ILL.

The literature of the surgical treatment of affections in the ileo-cæcal region has been increasing very rapidly during the last few years. A great deal has been said and written concerning the propriety of surgical interference in cases of perforative appendicitis, typhlitis, paratyphlitis and perityphlitis. Post-mortem examination and clinical experience have demonstrated that with few exceptions localized and diffuse peritonitis as well as suppurative inflammation of the connective tissue originating in the ileo-cæcal region, are caused by an antecedent affection of the appendix vermiformis, which has resulted in perforation or gangrene of that structure. While it cannot be said that unanimity of opinion exists among surgeons in reference to the exact indications for

operative treatment in cases of appendicitis and suppurative perityphlitis, it is safe to assert that the majority of them would not hesitate to resort to the knife in every instance where it would be possible to ascertain beyond a doubt that perforation had taken place. Numerous cases have been reported during the last three years where prompt action on part of the surgeon has been the means of saving life in cases of phlegmonous inflammation and circumscribed peritonitis caused by perforation of the appendix vermiformis; but, on the other hand, many laparotomies for diffuse peritonitis due to the same cause proved powerless as a life-saving measure, because the direct invasion of the peritoneal cavity had given rise to a diffuse septic peritonitis alike beyond the reach of medicinal and surgical measures. The principal object in writing this paper is to call the attention of the profession to the necessity of treating the primary disease of the appendix by radical measures before the advent of incurable complications, that is, before disease due to perforation has occurred. I believe that in many cases the development of perityphlitis is preceded by a well-marked complexus of symptoms pointing directly to the existence of appendicitis. Many patients suffer from well-defined symptoms indicative of the presence of an inflammatory lesion of the appendix for months and years before it gives rise to a perityphlitis or perforative peritonitis. It is of the greatest practical moment to recognize the exact condition in time, and to anticipate the dangerous and only too often absolutely fatal complications by removing permanently the source of danger which can be done at this time with comparative ease and almost perfect safety by the extirpation of the appendix.

The following cases will serve to illustrate the correctness of these assertions:

Case 1.—J. S., 22 years of age, clerk by occupation, came under my observation during the last week in April, 1889. He consulted me at my office, and informed me that during the last fifteen months he had suffered from five attacks of what his physician called perityphlitis. Each attack was attended by excruciating pain in the ileo-cæcal region, vomiting and constipation, and usually lasted from one week to twelve days. During the intervals he was able to follow his occupation, but never quite regained his former health. The treatment consisted of rest in bed and opiates. Between the attacks the bowels moved regularly, and the patient was free from pain. At the first examination I found the temperature 99.2° F., pulse 80, tongue heavily coated. Patient somewhat emaciated and pale. Pain was referred to the ileo-cæcal region, and directly over the location of the appendix vermiformis a circumscribed area of tenderness could be mapped out. Palpation and percussion failed to show any appreciable swelling, but on deep pressure while the patient's chest was elevated and thighs flexed, a firm cord-like body could be felt behind the cæcum over a point corresponding to the location of the appendix vermiformis. No tympanites or any other symptoms of peritonitis were present. I was satisfied of the existence of appendicitis from the history of the case and the symptoms and signs presented, and feared that during this or subsequent attacks perforation with all its uncertain consequences might take place. In view of the probability of such an occurrence, I advised a radical operation as the only means calculated to afford permanent relief. The patient had suffered so severely during the five preceding attacks that he readily consented to the proposed operation. During this attack he was confined to bed only at times, and took opiates as required for the pain. As the symptoms did not subside he was admitted into the Milwaukee Hospital April 30, for the purpose of having the appendix removed. A saline cathartic was administered the day before operation, and the following morning the colon was evacuated by a copious enema. The evening before operation the abdomen was shaved and thoroughly cleansed with warm water and potash soap, after which a compress wrung out of a sublimate solution 1:2000 was applied.

Operation May 1: Chloroform anæsthesia. After removal of the compress the surface was washed with undiluted alcohol. An incision about four inches in length was made directly over the center of the cæcum and parallel to the ascending colon, the lower angle of which reached to within an inch of Poupart's ligament. All hæmorrhage was carefully arrested before the abdominal cavity was opened. The peritoneum was divided between two anatomical forceps, when two fingers of the left hand were introduced and between them the opening was enlarged. Through this incision the cæcum came directly in view and presented a normal appearance both as to size and structure. No evidences of peritonitis or perityphlitis. On making pressure over the lower portion of the cæcum an elongated body about the thickness of an ordinary lead pencil could be distinctly felt rolling under the tip of the finger. The lower margin of the cæcum was grasped with the fingers, elevated, and brought into the wound. This manipulation brought into view the appendix which was directed upwards and inwards from its point of attachment, along the posterior wall of the cæcum. No adhesions between the appendix and the cæcum, but the mesentery of the appendix appeared to be shortened and exceedingly vascular. The peritoneal covering of the appendix appeared healthy, having retained its normal smoothness and lustre. The appendix was uniformly enlarged from its junction with

the cæcum to its distal extremity, and imparted a sensation of unusual hardness when grasped between the thumb and index finger. The mesentery of the appendix was ligated in several sections with fine silk and cut close to the appendix. The appendix was ligated near the cæcum with a silk ligature and amputated about a quarter of an inch below the point of ligation. The lumen of the appendix at the point of section was quite small, but as it was more than probable that it communicated with the cæcum, I deemed it necessary to prevent the possibility of a subsequent perforation from cutting through of the ligature by covering the stump with peritoneum. The stump was disinfected, dusted with iodoform, and buried by stitching the peritoneum from each side over it by a number of stitches of the continued suture. The cæcum was now returned and the wound closed by suturing the peritoneum with catgut, while the external sutures of silk were passed down to, but not through, the peritoneum. A compress of iodoform gauze and a thick layer of salicylated cotton retained by a number of strips of adhesive plaster encircling two-thirds of the body constituted the dressing. The subsequent history of the case was one of uninterrupted recovery. The pain disappeared as if by magic. The patient took no opiates after the operation. Temperature never above normal. On the third day the bowels were moved by a saline cathartic after which no further medication was necessary. At the end of a week the dressing was removed when the wound was found united throughout and the sutures were removed. At the end of the second week the patient left the hospital, and in the course of another week resumed his occupation. He is now in perfect health, has gained in flesh, and has been perfectly free from pain. The amputated appendix proved to be a very interesting pathological specimen. The part removed measured two inches in length, and in thickness corresponded in size to the last joint of the little finger. The lumen was uniform in size throughout and was large enough to admit a small-sized lead pencil. The appendix was slit open its whole length at a point opposite to the mesenteric attachment. On inspection of the mucous membrane lining it an oblong ulcer was discovered near the middle and opposite the mesenteric attachment. The ulcer measured about half an inch in length, and a quarter of an inch in width, its greater diameter corresponding to the long axis of the appendix. The margins of the ulcer were regular in outline and not undermined. It presented no evidences of repair. Its greatest depth corresponded to its centre. The whole mucous membrane was exceedingly vascular and much thickened, the submucous infiltration being uniform over its entire area. A transverse section of the appendix through the centre of the ulcer, examined under the microscope, showed that the entire thickness of the mucous membrane and part of the muscular coat were destroyed by the ulcerative process, and that the remaining thickness of the wall as far as the peritoneum was infiltrated with embryonal cells and leucocytes which were closely grouped together in the connective tissue reticulum. The submucous tissue and part of the muscular coat were similarly infiltrated throughout. No fæcal matter and no foreign body could be found in the lumen of the appendix, the whole contents consisted of a few drops of a highly viscid odorless secretion. The absence of any macroscopical cause of the inflammation, the condition of the mucous membrane, and the appearance of the ulcer substantiate the diagnosis of catarrhal appendicitis, which in this case had resulted in the formation of a catarrhal ulcer of considerable size and depth. There can be but little doubt that repeated acute exacerbations of the chronic inflammation would have finally resulted in perforation, and as the ulcer was located on the free side of the appendix there would have been great danger in such an event of invasion of the peritoneal cavity, and death from diffuse septic peritonitis. The second case came under the observation of Dr. Knut Hoegh, of Minneapolis, Minn., and through his courtesy I am permitted to incorporate it in this paper. It furnishes an illustration of another form of appendicitis (suppurative) amenable to early successful surgical treatment.

Case 2.—H. M., 37 years of age, merchant by occupation. For the last six or seven years he has suffered at intervals from attacks of pain in the abdomen. At first these attacks were not very severe, and of short duration, the general health remaining unimpaired. Questioned as to the condition of the bowels the patient stated that the attacks were usually attended by diarrhœa. The onset of pain was always sudden and apparently without any appreciable cause, as they often occurred during the night after the patient had retired the evening before in perfect health. In the beginning the attacks occurred about every six months, but later they came on more frequently, more severe, and of longer duration, and at the same time the general health became impaired. The later attacks he describes as commencing with a severe pain in the ileo-cæcal region which at times became excruciating, accompanied by sensations of chilliness. No vomiting, but more or less retching; bowels constipated; abdomen often distended and always tender on pressure over a limited space, at a point from which the pain always seemed to start.

Patient is not aware that he ever passed blood, mucus or pus with the stools. During the last fifteen months he has passed through five attacks,

the last one two months before the operation was performed. Since the last attack he has been unable to resume his business as he has suffered constantly from pain and tenderness in the ileo-cæcal region, loss of appetite, and an increasing debility. The patient looks prematurely old, showing evidences of senile marasmus seldom found in persons of his age. He is of medium height, somewhat emaciated, having lost twenty-five pounds of his customary weight. Examination of the abdomen revealed no tympanites and no swelling, but midway between umbilicus and the right anterior superior spine of the ilium a space about two inches square was found tender on pressure. Rectal exploration yielded a negative result. The usual internal treatment in such cases consisting of the administration of belladonna, nux vomica, and alkaline cathartics was not followed by any material improvement, so that the patient readily consented to an operation which had for its object the removal of the appendix vermiformis which it was believed was in a condition of catarrhal inflammation. The absence of swelling and fever seemed to render it improbable that the symptoms were due to circumscribed peritonitis, or inflammation in the cæcal mesentery or para-cæcal connective tissue. The repeated attacks of pain, the localized tenderness, and the digestive disturbances pointed to a localized inflammation depending upon some chronic pathological change within or near the appendix vermiformis. Dr. Foster, of Minneapolis, saw the case in consultation with Dr. Hoegh, and concurred in the opinion that an operation should be performed. The writer was consulted by letter, and strongly urged the propriety of a speedy resort to surgical treatment. The operation was performed by Dr. Hoegh in the St. Barnabas Hospital, August 19, 1889, assisted by Drs. Foster and Wood. Chloroform was used as an anæsthetic. Operation performed under strict antiseptic precautions. Incision through right linea semilunaris. On opening the peritoneal cavity the appendix came at once in sight lying free in the peritoneal cavity, pointing towards the pelvis. It was about two inches in length, remarkably firm to the touch, and its serous surface quite vascular. At some points it had formed adhesions with the surrounding structures. The adhesions were separated and a ligature applied near its junction with the cæcum. The stump was buried in the same manner as in case 1. The cæcum showed nothing abnormal. It was noticed that the point of communication between the appendix and cæcum was very narrow, the lumen not exceeding the size of a knitting needle. The abdominal incision was closed in the usual manner. Soon after the operation the patient suffered considerably from nausea and retching which gave rise to considerable pain in the wound. A slight elevation in the temperature a few days after the operation announced a slight suppuration in the superficial portion of the wound, which, however, soon subsided, and the healing by granulation proceeded in a satisfactory manner. Aside from this disturbance the patient went on to an uninterrupted and permanent recovery. Examination of the appendix after its removal showed that it was somewhat distended in its central part by a few drops of a thick, very offensive, purulent fluid of the consistency of cream, of a brownish color; the odor was not feculent, but rather fœtid. No concretion or foreign body was found. The mucous lining of the appendix showed two distinct but not very deep ulcers, both involved the entire thickness of the mucous membrane. The ulcer nearest the cæcum was the largest occupying the whole circumference of the lumen about one-quarter of an inch wide. The second ulcer nearer the apex was not larger in circumference than the size of a split pea. The serous coat near the junction of the cæcum was considerably thickened. Microscopical examination of the fluid showed broken down tissue, pus corpuscles, and pigment granules.

GENERAL REMARKS ON EARLY RADICAL OPERATION FOR APPENDICITIS.

Excision of the appendix in cases as reported above must be considered in the light of a curative and prophylactic operation. It is curative, as by it the cause of the disease with the diseased tissues is completely removed, and it is prophylactic, as by it the disastrous consequences of a probable later perforation are positively prevented. Extirpation of the appendix at a time before the inflammatory process has reached the serous coat is one of the easiest and safest of all intra-abdominal operations. The operation is performed in a healthy aseptic peritoneal cavity, and if the customary antiseptic precautions are carried out healing of the visceral and abdominal wounds by primary intention may be confidently expected. The operation eliminates a structure which if not entirely useless has at most only an unimportant physiological importance.

INDICATIONS FOR OPERATION.

It may be stated as a general rule, to which there can be but few exceptions, that the appendix should be extirpated in all cases where from the symptoms and history of the case the existence of a localized destructive inflammatory process can be surmised. From a diagnostic and practical standpoint all cases of appendicitis can be divided into two classes: 1. Acute. 2. Chronic. There can be but little doubt that most, if not all, acute cases are preceded by a chronic lesion. The history of many cases, and the pathological conditions of numerous specimens corroborate this statement. A foreign body, for instance, may be present for a long

time without giving rise to serious symptoms, but it cannot remain for any length of time without causing a catarrhal inflammation and superficial ulceration. An ulcerative catarrhal inflammation may exist for a long time before it gives rise to acute symptoms, and when the acute attack makes its appearance the inflammation has reached the peritoneal surface and the connective tissue underlying the appendix and cæcum; it is then no longer an uncomplicated case of appendicitis as the primary inflammation has extended beyond the structures of the appendix, and has given rise to perityphlitis, with or without perforation. Chronic appendicitis is characterized by acute exacerbations of short duration, the attacks of greater or less severity occurring at intervals of a few months or weeks. Between the attacks the patient may be in perfect health, unless the attacks recur with great frequency, when impairment of the digestive functions produces general ill health. The most important symptoms which point to the existence of chronic appendicitis are localized pain and a circumscribed area of tenderness at a place corresponding to the location of the appendix. Simple appendicitis does not give rise to any appreciable swelling as long as the lumen of the appendix remains in communication with the cæcum, as the resistance of the indurated walls is sufficient to force the contents of the appendix into the cæcum. In persons with thin abdominal walls it is possible to feel the hardened and thickened appendix by making deep pressure while the patient is placed in a position that favors relaxation of the abdominal muscles. Tympanites is usually absent unless the appendicitis is complicated by circumscribed peritonitis. Rigidity of the abdominal muscles is absent as long as the inflammation is limited to the deeper structures of the appendix. During the acute exacerbations of the chronic form of the disease aside of the pain the general symptoms are not severe. The temperature is either normal or there is only a slight rise seldom above 100° F. The pulse is only slightly increased in frequency, and shows none of the characteristic features which it presents in peritonitis.

Vomiting is occasionally present, but is not a constant nor even a frequent symptom. Constipation which is usually present is probably more the result of a change in diet, rest, and the medicines taken for the relief of pain than the disease. The frequency of catarrhal and ulcerative inflammation in the interior of the appendix as compared with the remaining portion of the intestinal tract is probably owing to the anatomical location of this structure. The lumen of the appendix constitutes a cul-de-sac which is in communication with the intestinal canal, but which is virtually excluded from the fæcal circulation, hence it serves an admirable purpose as a reservoir for the collection, localization and retention of pathogenic microbes. That the anatomical location of the appendix acts as a predisposing cause in the etiology of localized forms of infection is evident from the course of the disease.

The inflammatory process remains limited and does not extend by continuity to the cæcum, the extension of the disease being only in a peripheral direction from the mucous membrane to the deeper structures. In conclusion it may be said that recurring attacks of pain in the region of the appendix with a circumscribed area of tenderness over the same point are presumptive evidences of the existence of appendicitis, and if the other symptoms and signs point in the same direction treatment by abdominal section is indicated.

TECHNIQUE OF OPERATION.

As an operation for simple appendicitis always presupposes an aseptic condition of the peritoneal cavity, it is of the utmost importance to secure by thorough antiseptic precautions an aseptic condition of everything that has to be brought in contact with the wound. The field of operation should be disinfected by shaving and thorough washing with warm water and potash soap, after which a moist compress saturated either with a 1–2000 solution of sublimate or a 2½ per cent. solution of carbolic acid is applied and allowed to remain from the time the disinfection is made the evening before the operation until the patient is ready for the operation the next day. Immediately before the incision is made, I am in the habit of washing the surface once more with one of the disinfectant solutions, and lastly with absolute alcohol. The instruments should be sterilized by boiling for ten or fifteen minutes immediately before the operation. The operator and assistants should disinfect their hands by washing thoroughly with warm water and potash soap, and subsequently a 1–1000 solution of sublimate. If everything has been rendered thoroughly aseptic, that is to be brought in contact with the wound, no antiseptic solutions will be necessary during the operation, unless perhaps for the disinfection of the stump after amputation of the appendix. Sterilized water is used for the sponges.

Incision.—The incision that renders the cæcum and appendix most accessible to inspection, examination and operative manipulation is one made parallel to the long axis of the ascending colon and cæcum. It should be about four inches in length and directly over the centre of the cæcum, and extend to within an inch of Poupart's ligament. With a sharp scalpel the skin, fascia and successive muscular layers are rapidly divided without the use of any director until the peritoneum is reached. At this stage a pause is made in the operation in order to arrest

hæmorrhage by applying hæmostatic forceps to every bleeding point, the forceps remain until the surgeon is ready to close the wound, when it will generally be found that ligatures are superfluous, as the compression and crushing of the tissues caused by the forceps have been sufficient to arrest the bleeding. By following this plan unnecessary ligation of small vessels is avoided. The peritoneum is picked up by two catch-toothed forceps, and between them the abdominal cavity is opened, and the incision subsequently enlarged to the desired extent between the index and middle finger of the left hand. As soon as the peritoneal cavity is opened the further steps of the operation will be greatly facilitated by packing around the cæcum a small compress of aseptic gauze wrung out of sterilized water for the purpose of preventing prolapse of the small intestines. If the appendix is below the cæcum it will come into sight at once, when it can be examined and directly dealt with. If, as is more frequently the case, it is behind and towards the inner side of the cæcum its size and direction can be readily ascertained by palpation through the cæcum, but to make it accessible to direct examination and operative treatment it is necessary to raise the lower margin of the cæcum.

Excision of the Appendix.—If the serous coat has not been implicated by the inflammation the only attachment to be separated is the mesentery of the appendix. This is always present, but varies greatly in length and width. If it is attached to the whole length of the appendix it should be ligated in several sections with fine silk ligatures as far as the cæcum. If inflammatory adhesions are present they are separated, and all bleeding points carefully tied. When the appendix has been thus completely isolated a ligature of fine silk is tied around its base close to the cæcum, and about a quarter of an inch below it the section is made with scissors.

Treatment of Stump.—As the interior of the appendix under such circumstances necessarily must always contain pathogenic microörganisms it is necessary to disinfect the cut surface of the stump thoroughly. This can be done with one of the disinfectant solutions, after which the stump should be dusted with iodoform. After amputating the appendix it has been heretofore customary to drop the stump without making any provision against the possibility of perforation, subsequently taking place at the point of ligation. This I consider a great mistake. The ligature approximates a diseased mucous membrane, and if after the operation the entire stump is not speedily surrounded by a wall of impermeable granulation tissue which is later transformed into a connective tissue capsule, there is great danger that perforation will take place after cutting through of the ligature, thus exposing the patient to the same danger he was in before the operation. To obviate the possibility of such an occurrence the stump, after thorough disinfection and iodoformization should be covered with peritoneum by stitching the serous surfaces of the cæcum from both sides over it by a number of Lembert sutures. The serous surfaces will become agglutinated in a few hours, and in a few days the adhesions will have become sufficiently firm to protect the surrounding tissues and the peritoneal cavity against extravasation should leakage take place at the point of ligation. By resorting to this precaution we protect the patient against all possibility of the occurrence of perforative peritonitis subsequently, as the perforation, should it occur, of necessity would take place into the cæcum.

Closure of Abdominal Incision.—More care is required in closing an incision made through the several muscular layers of the abdominal wall than by going through the median line, as the ordinary way of closing a median incision would be very likely to be followed by a ventral hernia. The peritoneum must be sutured separately with fine catgut or silk sutures, while the remaining sutures are passed down to, but not through, the peritoneum. No provision for drainage is necessary in these cases.

Dressing of Wound.—After dusting the wound with iodoform a narrow strip of protective silk is applied over it, when it is covered with a compress of iodoform gauze and a larger compress of salicylated cotton which are retained with a few broad strips of rubber adhesive plaster encircling two-thirds of the body. After this the whole abdomen is enveloped with a thick layer of common cotton over which a well-fitting binder is snugly pinned; this not only gives additional support to the wound, but furnishes likewise an agreeable and efficient support to the abdominal wall.

After Treatment.—As it is advisable to move the bowels the day before the operation by a saline cathartic, and to empty the colon by enema the following morning, the bowels should not be disturbed again for several days after the operation. This can be accomplished by administering several ten-drop doses of deodorized tincture of opium, and placing the patient on absolute diet for at least two or three days. On the third day a saline cathartic is administered, and, if necessary, this is followed by an enema. The sutures are removed at the end of the first week, but the patient is not allowed to leave the bed for another week for fear that the adhesions might yield and a hernia might follow. For several weeks after this he should wear some kind of an efficient abdominal support to guard still longer against the same accidents.

CONCLUSIONS.

1. All cases of catarrhal and ulcerative ap-

pendicitis should be treated by laparotomy and excision of the appendix as soon as the lesion can be recognized.

2. Excision of the appendix in cases of simple uncomplicated appendicitis is one of the easiest and safest of all intra-abdominal operations.

3. Excision of the appendix in cases of appendicitis before perforation has occurred is both a curative and prophylactic measure.

4. The most constant and reliable symptom indicating the existence of appendicitis are recurring pains and circumscribed tenderness in the region of the appendix.

5. All operations on the appendix should be done through a straight incision parallel to and directly over the cæcum.

6. The stump after excision of the appendix should be carefully disinfected, iodoformized, and covered with peritoneum by suturing the serous surface of the cæcum on each side over it with a number of Lembert stitches.

7. The abdominal incision should be closed by two rows of sutures, the first embracing the peritoneum, and the second the remaining structures of the margins of the wound.

8. Drainage in such cases is unnecessary and should be dispensed with.

MEDICAL PROGRESS.

HYDATID CYST OF THE LIVER. RUPTURE—RECOVERY.—DR. H. C. MARKHAM, of Independence, Iowa (*North American Practitioner*, October, 1889) reports a case of this description. The cyst was first discovered three years ago. Under rest and alterative treatment amelioration of the symptoms apparently took place. In December last the patient's condition became much worse. The tumor, which appeared at the inferior border of the lower ribs, anteriorly, was now tense and as large as a pint bowl. A diagnosis of hydatid cyst was ventured at this time. A specimen of the cystic contents was obtained with a hypodermic needle, a subsequent examination of which confirmed the diagnosis. Upon the withdrawal of the needle the patient experienced excruciating pain and gave signs of collapse; the tumor meanwhile had disappeared, having evidently ruptured. The cyst refilled and soon reached the size of a fœtal head at term. It was aspirated and 3 pints of turbid serum removed, after which a strong solution of iodine was injected and allowed to remain for some time. An apparent cure was thus effected. At present deep palpation detects the hardened residue of the sac.

GALACTOCETE TESTIS.—A case is reported from the clinic of DR. A. B. MILES, New Orleans, which, for want of a better term, is indicated by this title. The testicle had been swelling for three months at the time of the examination. With the hypodermic needle a small quantity of a milky-looking fluid was drawn off. Examined in the pathological department of the Charity Hospital it was found to contain numerous fine granules in a state of active movement. No bacteria were present. Five hours later the testicle was found to be greatly diminished in size and within twenty-four hours the patient was discharged apparently cured. Five days later there was no evidence of a return of the former symptoms.—*N. O. Med. and Surg. Journ.*, Sept., 1889.

THE RELATIONS OF GROWTH OF THE BODY TO ITS ORGANS.—From an analysis of a large number of observations made in the Pathological Institute of Munich, K. OPPENHEIMER makes the following deductions:

1. The bodily weight reaches its highest relative standing earlier in females than in males. The weight of the adult man is about twenty times as great as at birth; that of the adult woman eighteen times as great. The length of the body reaches its highest relative point in man at the age of 15 years, when it amounts to 158 cm.; in woman the highest relative point is reached at the same age and amounts to 153.6 cm.

2. The growth of the lungs surpasses that of the body as a whole at nearly all periods, and especially at the middle period of growth.

3. The heart increases approximately in proportion to the entire body.

4. The spleen and kidneys increase proportionately with the heart.

5. The liver and notably the brain do not develop proportionately with the body.

6. The relative lack of development in the liver and brain is compensated by the rapid relative increase of fat and muscle, particularly the latter.

INCOMPLETE ABORTIONS.—DR. A. B. CARPENTER, of Cleveland (*Cleveland Med. Gaz.*), is strongly opposed to the expectant treatment of these cases, as he finds in it very grave sources of danger to the patient. Such cases require, on the contrary, prompt and radical treatment, whereby the retained products of conception are removed manually or otherwise. He finds the manual method unsatisfactory, and is disposed to adopt the method of Martin, of Berlin, who anæsthetizes his patients and curettes and douches the uterus with antiseptic precautions, completing the operation by applying tincture of iodine to the endometrium by means of the uterine syringe. In the after-treatment Dr. Carpenter avoids the use of opiates, but employs antipyrin with advantage.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.

PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscription may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of THE JOURNAL. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE.,
CHICAGO, ILLINOIS.

All members of the Association should send their Annual *Dues* to the *Treasurer*, Richard J. Dunglison, M.D., Lock Box 1274, Philadelphia, Pa.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, NOVEMBER 2, 1889.

CRIME AND INSANITY.

The universal testimony of all who have paid attention to the subject, is that insanity is incomparably more frequent among the inmates of prisons than in the general population. While one insane person to three hundred would be considered a large proportion of insane in a community, careful observers have found from 3 to 5 per cent. of prisoners to be either insane or imbecile. Such a state of affairs can only be accounted for on the supposition that very many convicts are either insane or strongly predisposed to insanity at the time of their conviction, or that there is something in the influence of prision life specially favorable to the development of mental derangement. Doubtless all of these elements contribute to the result. Frequently as the plea of insanity has been abused to defeat the ends of justice, there can, unfortunately, be no doubt that it is far from being a rare occurrence for persons to be sentenced as criminals who were, at the time of the commission of the unlawful act, influenced by insane delusions, actuated by morbid impulses, or incapable, by reason of mental enfeeblement of appreciating the true nature and results of their actions. The mistakes of juries in this respect are numerous, and the interpretation of the law, in this country and Great Britain, has been such that many persons whose mental unsoundness was recognized and admitted, have still been held legally responsible for the results of their disease. In a still larger proportion of cases, probably, although no distinctly morbid symptoms had been noticed before the commission of crime, there was such a predisposition to mental disease as rendered its development certain under favoring conditions. It is well known that habitual criminals are, as a class, not only uneducated, but of a low order of intellect, and incapable of any high degree of mental development. Defects of physical development, such as are frequent among the insane and idiotic, are so common in criminals that LOMBROSO and his followers maintain that habitual criminality is a disease, capable of physical diagnosis, and equivalent to moral insanity. We do not believe that this view is correct, as it certainly is not indorsed by most of those who have made a study of the subject, but although we believe it a mistake to elevate criminality to the rank of a distinct disease, there can be no reasonable doubt that it is often the result of an abnormal organization.

Making all reasonable allowance for these factors, it must, we fear be admitted that the influences of prison life are, in many cases, calculated to develop tendencies to mental disease which might, under more favorable circumstances, lie dormant. This is, probably, to a certain extent, unavoidable. The sense of disgrace, the loss of liberty, the injury as regards prospects for the future, are depressing influences which might be sufficient, of themselves, to unbalance a brain already predisposed to disease. In many cases, however, even in what are considered well-managed prisons, there are influences at work, in the monotony of the life and the lack of healthy occupations for the mind, to say nothing of the frequently unwholesome conditions as regards light, ventilation and food, which are needlessly unfavorable to the preservation of mental soundness. To discuss the general subject of prison administration would not be in place here, but it need hardly be said that in so far as a system, or lack of system, favors the development of insanity, it is neither humane, just, nor economical.

Judging from the experience of the past, it is scarcely to be expected that any efforts for a more scientific and humane interpretation of the law in reference to the insane accused of crime will meet with immediate success. The prospect in regard to prison reform is perhaps more encouraging. The law passed at the last session of the New York legislature, providing for an extension to

all the prisons of the State of the system of grading convicts according to their conduct, furnishing regular instruction and allowing suitable cases liberty on parole, which has worked so satisfactorily at the Elmira Reformatory, must be considered a long step in advance, and can hardly fail to find imitators elsewhere. By rendering the conditions of prison life more healthy, and less hopeless, it is reasonable to expect that it will materially reduce the number of those becoming insane during their confinement. The proportion of insane among convicts will, however, doubtless continue to be large, and the question of their treatment is one in which our profession should feel an interest and might reasonably hope to exert an influence.

In most of the States of this country, so far as we are aware, insane convicts receive very little treatment appropriate to their condition. If it is impracticable or unsafe to work them with other prisoners, they are generally confined in solitary cells, and no systematic attempt is made to divert their minds from their morbid ideas by recreation or employment. The natural result is that cases which might recover under suitable management drift on into hopeless dementia. At the expiration of their term of imprisonment they are sent to swell the multitude of hopeless chronic cases which crowd the wards of public asylums. Their presence there is objectionable in many ways. Although many of them are as inoffensive as most of those with whom they are brought in contact, there is always a considerable proportion in whom moral degradation is more conspicuous than intellectual impairment, and who, by their violence, insubordination, and continual attempts to escape, exercise a constant disturbing influence. Even when not personally objectionable, their presence is often felt as a degradation by such of their fellow-patients as are capable of being influenced by such feelings.

In addition to discharged convicts, nearly all State asylums contain more or less patients who have escaped trial or conviction for crime on the ground of insanity, to whom the same objections apply. In some such cases insanity has been feigned in order to escape the just penalty of wrong-doing, and it is frequently the case that it is not so well marked as to satisfy the public sentiment as to the innocence of the accused. Escapes under such circumstances are particularly unfortunate, and we have reason to think they are not very infrequent. The organization and discipline required by this class are different from those best adapted to the treatment of the great bulk of the insane, and to the attempt to treat both classes together is not calculated to promote the best interests of either.

The solution of the difficulty lies, unquestionably, in the provision of separate institutions for the treatment of this class. Of these there are already two in this country, in New York and Michigan, and the Legislature of Vermont, at its last session, provided, in the act establishing a State asylum, that detached wards should be built for the accommodation of the criminal insane. The experience of the institutions already in operation has shown the advantages of this plan both to the insane convicts and the population of the other asylums. Such institutions should be constructed and administered with prime regard to security, which need not be inconsistent with a very considerable degree of liberty and comfort to a large proportion of the inmates. They should receive all insane convicts as soon as their malady becomes evident, that they may have the benefit of early treatment. In case of recovery, they should be returned to prison to serve out the unexpired portions of their sentences. Persons accused of felony and found to be insane should also be committed to these institutions; and it might be well to provide, as has been done in Michigan, for the removal to them, from the other asylums, of those patients who, by persistent homicidal propensities, are a constant menace to the safety of their fellows. Each of our more populous States has enough insane of these classes to justify the erection of a separate institution for their care, and there are few in which the existing asylums are not already so crowded as to make additional accommodation necessary.

In Arkansas additional room is needed for the insane, and the superintendents of the asylums and the State Board of Charities unite in recommending the erection of a separate institution for this class. It is to be hoped, in the interest of all concerned, that the Legislature will take prompt action on this subject at its next session.

THE RADICAL TREATMENT OF SPINA BIFIDA.

Considerable attention is being directed, of late, to the treatment of spina bifida (*id est*, hydrorrhachis) by means of excision of the sac of the tumor. This is distinctly a reversion to first principles, inasmuch as the operation is by no means a new one, and has for many years past been discountenanced by the authorities as unproductive of the best results. But, like many another surgical procedure that has long since been laid away on the shelf, it bids fair to be freed from its venerable dust and appear again with new lustre. There are times, no doubt, when we all wish we were surgeons to take our part in the mighty innovations of modern surgery which are so rapidly removing the opprobria of our art; but whether we are surgeons or not, we take a just pride in the promotion of medical science, and hail with pleasure every advancement made in the direction of saving life and promoting human welfare.

Many years ago the surgeons felt obliged to abandon the radical operation for the relief of hydrorrhachis as altogether too dangerous and too barren of good results; indeed, most of our authoritative writers on surgery and obstetrics are still outspoken in their condemnation of such an operation, and as late as 1885 a committee appointed by the *Clinical Society of London* reported unfavorably upon the radical operation and approved of the treatment by iodine injections as the one most nearly imitating the process of natural cure and, therefore, most widely applicable. Nevertheless a sufficiently large number of successes obtained by the radical method have been recorded to raise a reasonable hope that a very decided improvement may be obtained by returning to the older plan of treatment. The treatment by iodine injections, which was popularized by the results secured in the hands of Brainard, Velpeau, Morton, Watt, Eate, Ewart and others, is, at best, unproductive of very satisfactory results. Thus, BRAINARD obtained a permanent cure in three cases out of seven, and VELPEAU in five out of ten. On the other hand, ROBSON, of Leeds, reports successful results in three of four cases operated upon by excision, while other and similar results are reported by Wilson, Atkinson, Howson and Barton, of England, and by Hayes and Hurd, of our own country. The latter, DR. H. P. HURD (*Ther. Gaz.*, Oct. 15, 1889), in describing his own case, has also reviewed the literature of the subject. As Dr. Hurd's citations of cases are mostly from English sources, it is with pleasure that we direct attention to four other cases which have recently been given publicity in Chicago, DR. A. E. HOADLEY having reported a successful case to the Chicago Medical Society (Oct. 7, 1889), and DR. CHAS. T. PARKES having reported to the Chicago Gynecological Society (Oct. 18, 1889) three cases operated on, with two successful results. Although such cases as these are not yet sufficiently numerous to enable one to predicate definite conclusions, they have at least subserved excellent purposes in proving that the radical method, in proper hands, is capable of yielding satisfaction. Furthermore, the testimony of these operators seems to indicate three pretty clearly defined facts:

1. That the escape of a considerable quantity of fluid from the sac is not necessarily attended by dangerous sequelæ.

2. That there is less danger from injury to the nerve structures than has been believed, and

3. That many of the unfavorable results of former operations were, doubtless, due to lack of proper precautions relative to the prevention of sepsis.

EDITORIAL NOTES.

HOME.

THE first medical degree ever given to an American woman was given forty years ago. To-day there are 2,500 women in this country having diplomas from either American or foreign schools.

YELLOW FEVER IN FLORIDA.—Surgeon-General Hamilton, of the Marine-Hospital Service, has received a telegram from Dr. Porter, at Key West, reporting another case of yellow fever at that place, and that quarantine restrictions have been resumed. The patient in this case is E. Ellinger, who left Havana September 21, bound for New York.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its annual session at Nashville, Tenn., November 12, 13 and 14, 1889. The following are the papers to be read: The President's Annual Address, Dr. Hunter McGuire, Richmond, Va.; "Report of Gynecological Work, with Especial Reference to Methods," Dr. R. B. Maury, Memphis, Tenn.; "Direct Herniotomy, with Cases," Dr. W. O. Roberts, Louis-

ville, Ky.; "Open Abdominal Treatment" Dr. B. E. Hadra, Galveston, Tex.; "The Abortive Treatment of Acute Pelvic Inflammation," Dr. Virgil O. Hardon, Atlanta, Ga.; "The Importance of Early Treatment of Inflammatory Affections of the Uterus," Dr. Wm. C. Dabney, University of Virginia; "The Relation of the Nerve System to Reparative Surgery," Dr. Thos. O. Summers, Jacksonville, Fla.; "Concerning the Causes of Frequent Failure of Relief of Reflex Symptoms after Trachelorrhaphy," Dr. W. F. Hyer, Meridian, Miss.; "Cranial Surgery," Dr. DeSaussure Ford, Augusta, Ga.; "The Treatment of Ectopic Pregnancy," Dr. W. H. Wathen, Louisville, Ky.; "Laparotomy in Extra-Uterine Pregnancy," Dr. Waldo Briggs, St. Louis, Mo.; "Epithelioma of the Penis," with the Report of a Case," Dr. D. W. Yandell, Louisville, Ky.; "Laparotomy in Intestinal Obstruction," Dr. C. Kollock, Cheraw, S.C.; "An Experimental Study of Intestinal Anastomosis," Dr. Jno. D. S. Davis, Birmingham, Ala.; "Operative Interference in Ascites," Dr. Hugh M. Taylor, Richmond, Va.; "Observations Pertaining to Pregnancy and Parturition," Dr. W. Duncan, Savannah, Ga.; "Puerperal Convulsions," Dr. Jno. Herbert Claiborne, Petersburg, Va.; "Some Remarks Upon Aneurisms, Relating More Especially to their Surgical Treatment," Dr. F. T. Meriwether, Asheville, N. C.; "Coccygodynia and Its Treatment," Dr. Hunter P. Cooper, Atlanta, Ga.; "The Improved Cæsarean Section *vs.* Craniotomy," Dr. W. D. Haggard, Nashville, Tenn.; "Conservative Surgery in Injuries of the Foot," Dr. J. T. Wilson, Sherman, Texas; "Gun-Shot Fractures of the Femur," Dr. Jno. Brownrigg, Columbus, Miss.; "Tropho-Neurosis as a Factor in the Phenomena of Syphilis," Dr. G. Frank Lydston, Chicago, Ill.; "Trophic Changes Following Nerve Injury in Fractures, with report of two cases," Dr. Wm. Perrin Nicolson, Atlanta, Ga.; "Treatment of Malignant Diseases of the Rectum," Dr. W. T. Briggs, Nashville, Tenn.; "Gynecology in its Relations to Obstetrics," Dr. W. L. Robinson, Danville, Va.; "Observations Based Upon an Experience of Seventy-five Abdominal Operations," Dr. Jos. Taber Johnson, Washington, D. C.; "Twenty Consecutive Cases of Abdominal Section," Dr. L. S. McMurtry, Danville, Ky.; "Triple Amputations," Dr. J. B. Luckie, Birmingham, Ala.; "The Treatment of Contracted Bladder by Hot Water Dilatation," Dr. I. S. Stone, Lincoln, Va.; "Complications Occurring in the Clinical History of Ovarian Tumors," Dr. Richard Douglas, Nashville, Tenn.; "What Kind of Instruments Does Modern Antiseptic Surgery Demand?" Dr. J. W. Long, Randleman, N. C.; "Intestinal Anastomotic Operations with Segmented Rubber Rings, with Some Practical Suggestions as to Their Use in Other Surgical Procedures," Dr. A. V. L. Brokaw, St. Louis, Mo.; "Leucocythæmic Tumors as a Neoplastic Exponent of Rheumatism and Their Similarity to Malignancy—with a Case," Dr. W. Locke Chew, Birmingham, Ala.; "What Civilization is Doing for the Human Female," Dr. A. Lapthorn Smith, Montreal, Canada; "The Achievements of Modern Surgery," Dr. J. Ewing Mears, Philadelphia, Pa.; "The Treatment of the Pedicle in Suprapubic Hysterectomy," Dr. Wm. M. Polk, New York; "Pus in the Pelvis and How to Deal with it," Dr. Joseph Price, Philadelphia, Pa.

Members of the profession are invited to attend.

EXTENT OF THE OPIUM TRAFFIC.—The Massachusetts Board of Health has been making a series of investigations for the purpose of learning the extent of the opium traffic in that State. The result shows that while the use of the drug is not rapidly increasing it yet has a strong hold among all classes. Circulars were sent to the druggists and older physicians. Among the inquiries and replies are these:

1. From your own observation is the use of opium and its preparations increasing in the community in which you live? Two hundred and twenty-five answers received; 66 per cent. replied no, 28 per cent yes, 6 per cent. do not know.

2. If such be the case, what is the probable cause of such increase? Twenty per cent. give the use of opium by physicians as the sole cause, 11 per cent. give this as the cause in part. Ease of obtaining opium from druggists, excessive brain work, desire for stimulation, fast living, comprise most of the remaining answers.

3. Are diseases calling for the use of opium increasing? Two hundred and nine answers; 84 per cent. no, 16 per cent. yes.

4. In what form or manner is it employed? One hundred and sixty answers; 30 per cent. all forms, 22 per cent. morphia, 13 per cent. morphine and laudanum, 12 per cent. morphia by the mouth and hypodermically, 10 per cent. morphia hypodermically.

5. Does the prohibition of alcohol increase its (opium) use? Two hundred and two answers; 67 per cent. no, 10 per cent. yes, 3 per cent. possibly, 20 per cent. do not know.

6. What classes of people mostly use it? One hundred

and sixty-six answers; 30 per cent. all classes, 22 per cent. higher, 8 per cent. middle, 6 per cent. lower, 12 per cent. middle and higher, 14 per cent. nervous women, 8 per cent. do not know.

THE PHILADELPHIA POLYCLINIC AND COLLEGE FOR GRADUATES IN MEDICINE.—The Board of Trustees, in recognition of distinguished services rendered the institution, as former Professors, have elected Richard Levis, M.D., Emeritus Professor of Surgery; J. Solis-Cohen, M.D., Emeritus Professor of Laryngology; Charles H. Burnett, M.D., Emeritus Professor of Otology; and Charles B. Nancrede, M.D., who was recently called to the Chair of Surgery in the University of Michigan, Emeritus Professor of General Orthopædic Surgery.

An additional Chair of Orthopædic Surgery was created and Thomas G. Morton was elected Professor. Professor Morton will utilize the vast clinics of the Orthopædic Hospital and Infirmary for nervous diseases, Professor S. Weir Mitchell having for some time past used the Nervous Department.

A new Department of Dentistry was created and the Faculty was authorized to place a competent teacher in charge until the next meeting of the Trustees.

A new Department of Experimental Therapeutics and Physiology was created, and Thomas J. Mays, M.D., was elected Professor.

The Chair of Clinical Surgery was filled by the election of Thomas S. K. Morton, M.D., Professor.

C. L. Bower, M.D., was elected Adjunct Professor of Clinical and Operative Surgery, and J. Abbott Cantrell, M.D., Adjunct Professor of Diseases of the Skin.

The Chair of Pathology was left vacant until the next meeting.

The report of the Building Committee was read, in which it was stated that contracts had been signed for preliminary work to the amount of $23,150. About $30,000 will be required to finish the building, and it was decided to push the building to completion as fast as the donations for the purpose could be obtained. The overcrowded condition of the present building makes it necessary to use every exertion to move into the new building in the early spring, even though it be unfinished.

REMBRANDT'S "LESSON IN ANATOMY."—Rembrandt's celebrated picture entitled "A Lesson in Anatomy," a full size copy of which hangs at present in the hall of the College of Physicians of Philadelphia, has, we understand, been purchased by Mr. Ellesworth, for the Institute of Art, of Chicago. It formerly belonged to the Princess de Sagan, and until recently has been in an art gallery in the Hague.

THE RED CROSS AT JOHNSTOWN.—Miss Clara Barton has communicated to one of the Johnstown newspapers the decision of the Red Cross Association to bring to an end the relief campaign in the Conemaugh valley. The present organization will be disbanded to give place to a lesser relief administration, under local control, which will receive from Miss Barton all supplies that remain undispensed when she departs. This has been the most exacting campaign through which the American Red Cross Society has been called to pass; the records show that over 30,000 reliefs, medical and other, have been granted during the past four months.

FOREIGN.

DR. PHILIPPE RICORD, the celebrated French surgeon, is dead. He was born in Baltimore, Md., December 10, 1800.

GERMAN STUDENTS' DUELS.—The *British Medical Journal* says that two students, one belonging to the medical and the other to the legal faculty of the University of Halle, have recently been condemned to three months' imprisonment in a fortress for fighting a duel with pistols, although neither of them was hurt. It appears from this that a paternal Government will only allow bellicose *Burschen* to avenge their honor by slashing each other's faces.

DR. P. MÉNIÈRE has resigned the management of the *Gazette de Gynécologie*, published in Paris, France, on account of ill-health. Dr. Phillippeau is his successor.

BRITISH MEDICAL ASSOCIATION.—It is probable that the 1891 meeting of the Association will be held in the ancient city of Bristol, the metropolis of the West of England, a city noted for its historic buildings and romantic surroundings.

PRESIDENT DE WINTON, of the geographical section of the British Association, states that American climate has improved the physique of the Anglo-Saxon race.

TOPICS OF THE WEEK.

THE ACIDS OF THE STOMACH.

There is no doubt that the chief acid found in the stomach during natural digestion is free hydrochloric acid. This has been abundantly proved by Bidder and Schmidt, and numerous observers succeeding them. The methods used are, however, too long and too complicated to employ in clinical work. The physician wishes to know what, in a particular case of disease, are the chemical changes going on in the stomach: whether, for example, hydrochloric acid is present as well as pepsin and organic acids. Now, in the examination of the contents of a diseased stomach three forms of acid may be present—hydrochloric acid, a mineral acid; organic acids, such as lactic acid, butyric, etc.; and thirdly, acid phosphates. It is chiefly of importance to determine the presence of hydrochloric acid and of organic acids. Many methods have been proposed for doing this; they consist mainly in testing the effect of the stomach contents on various colored solutions. Thus a solution of methyl-violet is decolorized by hydrochloric acid, so that if this reaction is obtained the free acid is present in the liquid tested. Lactic acid turns the violet a dirty yellow. Tropæolin also is turned deep reddish-brown by free hydrochloric acid. Unfortunately these tests, simple as they appear, are not accurate, since the reactions are interfered with by the presence of peptones and of some neutral salts, and, as these are usually present in the stomach contents, no reliable results can be obtained by using methyl-violet and tropæolin. They have been superseded by congo-red, which is turned blue by free hydrochloric acid, and by a solution of vanillin and phloroglucin in alcohol, which is turned a deep red by the same acid. These simple clinical tests are, however, rendered useless by the fact that they are interfered with by the presence of peptone, ammonium salts, chlorides, and phosphates.

In the present state of our knowledge, therefore, there is no reliable indicator for the presence of free hydrochloric acid in the stomach contents. Other methods which may be used are too complicated for clinical use. Thus ether has the property of dissolving organic acids from a liquid, leaving the mineral acids in solution. It may thus be used for separating the lactic, butyric, and other acids from the hydrochloric acid; and if in a liquid obtained from the stomach it is found that ether removes the whole of the acids present, it may be concluded that no free hydrochloric acid is present. In many cases this conclusion would be an important one as a clear indication for a line of treatment. Dr. Leo has lately[1] published a new method for the indication of free hydrochloric acid which may prove useful. Leo considers the case where it is only a question of the presence of free hydric chloride, and of an acid phosphate. To a few drops of the stomach contents a pinch of carbonate of calcium is added; if the acidity, as tested by litmus paper, disappears, only a free acid is present, but if the liquid is still acid after the addition of the chalk, an acid salt is present. If, moreover, organic acids be present, they must be first removed by shaking with ether before the chalk is added. It does not seem that Leo's method is one that can be applied at the bedside, because the detection of free hydrochloric acid is chiefly requisite in those cases in which organic acids are also present, as in cases of dilated stomach. At present, indeed, a ready method, suitable in clinical practice for the detection of free hydrochloric acid in organic liquids is a desideratum. —*British Medical Journal.*

[1] Centralblatt für die medicinishen Wissenschaften, No. 26.

PROFESSOR CHARCOT.

It would seem almost superfluous to say anything of Dr. Charcot, as he is already so well known in the profession. He is certainly one of the most remarkable medical characters of the day, and even physically his person and features bear a peculiar stamp. He is a man of ordinary stature, 55 years of age, and stoops a little. His face is pale and clean-shaven, resembling very much that of the first Napoleon, and giving the impression of a thoughtful mind. After having for a long time devoted himself to the study of pure pathological anatomy, he gave himself up to the clinical study of nervous affections, a scientific territory till then almost unexplored. He here displayed rare qualities of observation, an exemplary patience, a marvelous prudence, and the most perfect method. He has won the intellectual esteem of his bitterest opponents, a world-wide reputation, and the assurance of having attached his name to a work which will remain imperishable. Prof. Charcot's clinic at the Salpêtrière is well known, and constitutes the greatest scientific centre in France for the study of the pathology, diagnosis and treatment of nervous diseases. It is attended by physicians and students from all parts of the world, where they find a vast amount of clinical material and the complete methods of study organized and developed by the eminent professor, aided by a body of distinguished pupils and assistants who surround him in his daily visits. For many years Prof. Charcot has taken a foremost place among the leaders of medical science; his clinique, his laboratories, his works and his pupils constitute one of the chief glories of the faculties of Paris. His lectures are most impressive; he is sober in manner, clear in diction, picturesque in illustration, original in conception, indefatigable in research, and spares neither time, labor nor wealth in using all the methods of clinical illustration at his disposal. It would be fastidious and useless to analyze here all his discoveries; I would simply refer to some which leave the narrow limits of medicine and touch somewhat on philosophy. In the chaos of the notions acquired on cerebral function it can not be denied that it was Charcot who was the first to throw light on the subject, in finding, as if by a stroke of genius, the method which permitted him to fix the cerebral motor localizations. He, at the same time with Kussmaul, taught men the mechanism of their memory and of their language. And who does not remember the debates on the questions of magnetism and of hysteria that have so recently taken place among the lay and medical public? It was Dr. Charcot who, armed with his scientific *sangfroid* and method, reduced to definite

laws facts which, in appearance, were the most incoherent. I may here observe that to the Hospice of the Salpêtrière, which was originally intended only for the aged and insane of the female sex, there being 3,145 of the former and 720 of the latter, there have been added forty-two beds for male patients and a certain number of female patients suffering from nervous diseases, which additions were made for the most special study of diseases of the nervous system. It may be said that Dr. Charcot began his professional career at that asylum. He was interne in it in 1852, and became physician in 1862. He was appointed professor of diseases of the nervous system in 1881, a chair which was created for him. Since 1862 he has not ceased to give his memorable series of lectures and clinical conferences, which are held every Tuesday morning at the Salpêtrière, and on Friday morning he holds consultations, both of which are always well attended. In addition to the above there are thirty beds for children afflicted with nervous diseases, and 200 beds for epileptics. Besides these he has the control of a series of infirmary wards, into which are brought all the patients whom he desires to select from among the infirm women who are the permanent inmates of the other parts of the Salpêtrière. Altogether he has at his disposal for clinical study and under direct treatment more than 2,000 patients. No wonder, then, that with this vast experience Prof. Charcot should be regarded as the highest authority on nervous affections. He is also a member of the Academy of Medicine.—Paris Correspondence, *Boston Med. and Surg. Journal.*

WHAT REAL VALUE HAVE THE NATURAL MINERAL WATERS IN THE TREATMENT OF DISEASES OF THE SKIN?

At the recent meeting of the American Dermatological Association DR. L. D. BULKLEY, of New York, presented a paper in which he discussed the subject of natural mineral waters in the treatment of disease, and from which we make the following extract:

It is the popular impression that natural mineral waters help certain skin diseases; that some are to be applied on the outside, and some are to be taken internally for the purpose of washing out the noxious agent. No doubt many cases are benefited, but any one who has seen many cases of the effects of natural mineral waters must be many times disappointed. The water is but one element in the case; hope and faith may play an important part. Then there is the change of scene, rest from ordinary occupation, and, perhaps, the enforcement of regular hours.

In Europe, most of the springs have resident medical advisers, but, unfortunately, there are few of them in this country. It should be remembered that in certain instances other appropriate remedies are being taken at the same time; witness the treatment of syphilis at the hot springs of Arkansas. But in any case it is the water, pure and simple, which contributes most to the cure. Most of the waters have little effect upon the skin, but reach especially the kidneys, liver, bowels, etc. We cannot always predict the effect of the water from its chemical analysis. Certain mineral waters are taken hot at the springs, but cold, or even in ice, when at a distance. In the case of iron, arsenic and bromine springs, the results are rather indefinite. Sometimes cutaneous diseases depending on debility will be improved. We have all seen cases of eczema which have been treated at the sulphur springs in vain. Where there is a rheumatic element back of the cutaneous lesion, no doubt some good can be received; but in those cases it is the alkaline water, and not the sulphur, which is of benefit.

Like all other remedies, the use of springs must be carefully prescribed in order to be of the greatest use. Probably more benefit is derived in eczema than in other diseases, and even then it should be toward the close of the case. First, should be used the alkaline and moderately purgative waters, and then a tonic course. Carlsbad is advisable where there is a large abdominal plethora. In acute cases the hot springs should be used. Care must be taken lest acute eczema be excited by the springs, for some very severe cases have been lighted up in this manner. In psoriasis, sometimes sea-bathing is of far more benefit than the mineral springs. In syphilis, little benefit follows unless other treatment is kept up. Acne will sometimes be benefited somewhat, and the iron springs are better than the sulphur. The chief difficulty in the use of this treatment is the fact that these patients are not under supervision, and are apt to follow their own fancy or the guidance of the attendants at the baths.

INJURIES BY RAILROAD.

Railroad business and travel is a topic that is absorbing increased attention every year, and new guards against danger are being constantly applied. A monster petition, containing nearly 10,000, names of brakemen, has lately been sent to the Interstate Commerce Commission, asking them to urge upon Congress the necessity for legislation requiring the use of automatic brakes and couplers on freight cars; and when it is remembered that something like 450 men are killed, and 4,000 injured every year in operating freight cars, the subject assumes great importance. An article in *Scribner's Magazine* for September gives the following facts on the general topic of safety in railroad travel:

When one reflects upon the destructive energy which is contained in a swiftly moving train, and sees its effects in a wreck; when he understands how many minute mechanical details, and how many minds and hands must work together in harmony to insure its safe arrival at its destination, he must marvel at the safety of railroad travel. In the year 1887, the passengers killed in train accidents in the United States were 207; those injured were 916. The employés killed were 406, and injured 890. These were in train accidents only, it must be remembered, and do not include persons killed at crossings, or while trespassing on the track, or employés killed and injured making up trains. As will be seen later, the casualties in these two classes are much greater than those from train accidents. The total passenger movement in 1887 was equal to one passenger traveling 10,570,306,710 miles. That is to say, a passenger might have traveled 51,000,000 miles before being killed, or 12,000,000 miles before being injured. Or he might travel day and night steadily at the rate of 30 miles an hour for 194 years before being killed. Mark Twain would doubtless conclude from this that traveling by rail is much the safest profession that a man could adopt. It is unquestionably true that it is safer than traveling by coach or on horseback, and probably it is safer than any other method of getting over the earth's surface that man has yet contrived, unless it may be by ocean steamer. If one wants anything safer, he must walk.

PRACTICAL NOTES.

EXALGINE IN NEURALGIA.

Attracted by the report of Dujardin-Beaumetz and Bardet on the properties of this agent, DR. FREDERICK PETERSON, of New York, has emphasized it in a number of neuralgic cases with satisfactory results. He administered it both in the form of pills containing 2 grains each, and a cordial with 2½ grains to the tablespoonful. He finds it a valuable analgesic, and has succeeded in curing with it a number of cases of cephalalgia, facial neuralgia, brachial neuritis, etc. In some cases of failure he believes that his doses were too small and that one should, in most cases, begin with doses of from 4 to 6 grains, repeated every two to four hours. Exalgine is very soluble in water containing a little alcohol, but only slightly soluble in cold water. It acts very energetically upon the cerebro-spinal axis in animals, giving rise to phenomena of impulsion, tremor and paralysis of the respiratory muscles. In non-toxic doses sensibility to pain disappears, but that of touch persists; it produces also a gradual but notable fall of temperature. Its effects are somewhat similar to those of antipyrin, but its effect upon sensibility is more marked and upon the thermogenic centres less. In therapeutical use exalgine produces no rash cyanosis or gastro-intestinal irritation. It is eliminated by the urine modifying its secretion, and in diabetic polyuria it diminishes the daily amount of urine and the quantity of sugar.—*New York Medical Record.*

INCOMPATIBILITY OF ANTIPYRIN WITH OTHER DRUGS.

M. CHARLES has called attention to the precipitate which is formed by mixing solutions of antipyrin and cinchona, and M. Ferand has made later some experiments which warrant him in saying that in mixtures containing antipyrin and cinchona all the active principles of the potion are precipitated and leave in the filtered liquid scarcely a perceptible trace of antipyrin and the alkaloids. He notices, as did M. Charles, that the precipitate is readily soluble in weak acids, from which he concludes that the potion does not become inert, as the precipitate should dissolve in the gastric juice.

M. Blainville, pharmacist, records a new incompatible with antipyrin; having had occasion to mix 4 grams of antipyrin and 5 grams of hydrate of chloral and 15 grams of water, he found the mixture became milky, then clearing, deposited an oleaginous liquid. Decanted, this liquid possessed neither the taste of antipyrin nor of chloral, but resembled coriander seeds.

Upon the subject of incompatibles, which are discovered each day by pharmacists, M. Ferand remarks that they should avoid mixing substances as complex as antipyrin with chemicals capable of modifying its composition and, consequently, its physiological action.

Formulas the most simple, said he, such as distilled water sweetened, should be the rule when prescribing a new body used in therapeutics before all its chemical characteristics are thoroughly studied.—*La France Médicale.*—*Times and Register.*

PICROTOXIN AS AN ANTIDOTE TO MORPHINE.

From experimental investigations A. BÓKAI (*Cent. für Klin. Med.*, No. 33, 1889) is convinced that picrotoxin is the most rational antidote to morphine. Picrotoxin and morphine produce antagonistic effects upon the respiratory centre, the latter paralyzing its action, while small doses of picrotoxin increase it and inhibit the paralyzing influence of morphine. Further, picrotoxin irritates the vaso-constricting center of the medulla and is, therefore, capable of hindering the rapid fall of blood pressure in morphine poisoning. The two agents likewise have opposing effects upon the hemispheres. Picrotoxin also deserves attention from the fact that it may be given in the place of the nux vomica preparations and may perhaps be found a good prophylactic for chloroform asphyxia.

CHLOROFORM ADMINISTRATION.

The administration of chloroform in preference to ether is much more common in Europe than in this country. Several deaths having recently occurred in the Paris hospitals from the use of chloroform, the surgeons are beginning to seek a safer anæsthetic, and it is now proposed to substitute the chloride of methylene, or, more properly, *methylic chloroform*. PROF. REGNAULD has called the attention of the Académie de Medécine to this agent, which was formerly regarded with favor by Sir Spencer Wells and Richardson. Regnauld finds that in reality the so-called chloride of methylene is nothing but a mixture of four parts of chloroform and one part of methylic alcohol. Its action is very much slower than that of chloroform, but it is hoped that it will prove proportionately safer.—*N. Y. Medical Journal.*

DEATH FROM SULPHONAL.

DR. R. R. PETITT reports a case of death from the administration of sulphonal. The patient, a woman 28 years old, was suffering from melancholia. She took 15 grains of sulphonal, and about an hour later the dose was repeated. Soon after she went to sleep and could not be aroused for twenty-four hours. Death occurred from failure of respiration forty hours after the dose was taken.—*Medical News.*

SOCIETY PROCEEDINGS.

Obstetrical Society of Philadelphia.

Stated Meeting, September 5, 1889.

DR. JOHN C. DA COSTA IN THE CHAIR.

DR. JOHN DA COSTA:

AN EASY METHOD OF REPAIRING THE PERINEUM.

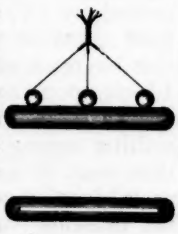
There is probably not any operation in gynecology which gives a woman so much relief as the proper restoration of a torn perineum.

In describing this operation I shall not say a word in regard to the anatomy of the perineum, which is the same as it was a hundred years ago. The same muscles are torn now as were torn then. This subject of tear of the perineum may seem to be a very simple matter; but when we consider that 20 per cent. of women have their perinea torn in first labors, and 4 per cent. in subsequent labors, it ceases to be a little matter, and becomes one of importance.

I do not claim anything new. The operation is the result of a combination of old ideas. It is an easy and simple method of repairing the perineum, and answers equally well whether the tear is long or short. I thought I had something new in the use of these rubber bars, when I got it up eight years ago, but afterwards found that one of my ideas had been anticipated twenty years before.

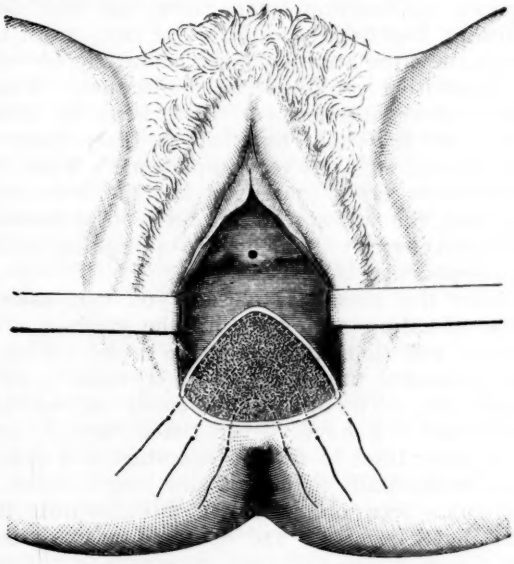
Mr. Lane, of London, in 1860, used ivory bars with small perforations, and reports thirty consecutive cases without a failure. Dr. Thompson, of Washington, used flat rubber bars with small holes in them, and reports fifty-three consecutive cases, all cured. Dr. Thomas, after speaking of the quill suture, leads us to infer that he used perforated bars, and states that he does not recall a failure in the operation.

I do not know how many present are believers in the idea advanced four or five years ago, at the meeting of the American Gynæcological Society in this city, "that there is no such thing as a perineum;" but there certainly is a triangular body between the vagina on one side and the rectum on the other, and this triangular body is often torn through during labor, and becomes what I call a ruptured perineum. There are many ways of repairing it. Some are very simple, some are very striking but very useless; what I strive to do is to restore the perineum very much as nature made it. The operation is easy and the armamentarium is simple. We require a pair of scissors (I use a pair of blunt-pointed scissors), a perineal needle, a little silver wire and shot, a shot compressor, and two bars shaped like the cut.



Bar, ½ size.

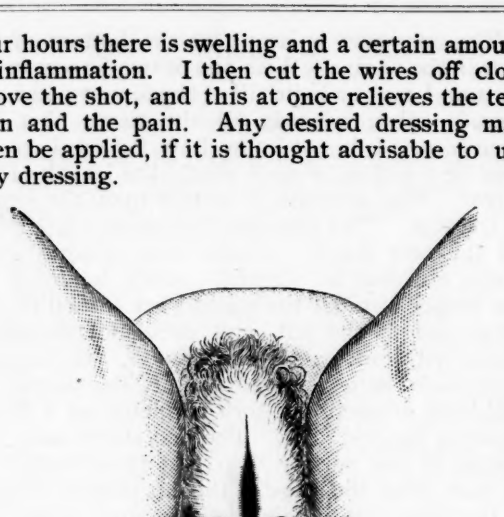
The operation is begun at the bottom of the tear in the vagina. With one or two fingers in the rectum, I make a little slit at the lowest point and denude subcutaneously all the tissue that has been torn. I do not know how far up I go—it may be 2 inches, or even nearly the length of the finger. This depends altogether upon the extent of the tear. The important thing is to get rid of all the scar tissue. Unless this is done, good union will not be secured. After denuding up the proper distance the scissors are turned to the right and to the left, and each side denuded. Then, with four cuts of the scissors, the loosened cicatricial tissue is removed. A denudation of this kind freshens the torn perineum as I think no other method does. The first stitch near the bottom of raw surface is passed three-fourths of an inch from the edge of the cut portion, buried in the tissue the whole distance, and comes out at the same distance on the other side. The needle is then threaded with silver wire and withdrawn. The second stitch is put in the same way. The third stitch is started in the skin like the others, and three-fourths of an inch from the edge of the cut, carried along just under the edge of the denudation the whole way around. This is the most important stitch of all. It was the idea of the late Albert H. Smith, when one of the physicians-in-chief at the Nurses' Home some years ago. The stitches are buried throughout, and only three are used in the operation. All that is necessary is to bring them out in nearly a straight line.



Surface denuded, and stitches in place.

The wires are then slipped through slotted rubber bars, on each side, and shot-clamped on them. After the shot are clamped the ends of the wires are twisted over the median line and the ends passed through a piece of catheter. In twenty-

four hours there is swelling and a certain amount of inflammation. I then cut the wires off close above the shot, and this at once relieves the tension and the pain. Any desired dressing may then be applied, if it is thought advisable to use any dressing.



Operation finished, and bars in place.

What are the advantages of this operation? In the first place you have but three stitches. I think that probably every gentleman has seen perinea operated on where there has been deep quilting, and have seen the tissue slough out because the circulation has been so interfered with that nutrition could not be maintained. These three sutures interfere very little with the circulation and they hold together the deep parts of the wound, which is very important. When inflammation takes place you cut the wires over the shot, the bars spread and relieve the tension, and prevent any tendency to sloughing, while still supporting the parts.

After the wound is closed, you may take a piece of catgut and whip up the edges in the vagina, and along the line of the raphé. This is not necessary unless we want to make a very perfect job. The operation is easily and quickly performed. I have never timed myself, and have never tried to do the operation in a hurry, but I accidentally found out how long it takes.

On one occasion, in thirty minutes from the time that I began, I had operated on two cases, and this included the time necessary to put one patient under ether from perfect consciousness to unconsciousness. The denudation is accomplished in four or five minutes.

This is a different operation from that in which the denudation is made in curved lines, and where another operation is required for any existing rectocle. The operation described above will include also a rectocele. It is better than another popular operation, which does not restore the triangle which nature made, but makes a beautiful skin-flap, which looks well from the outside, but affords no support.

I do not claim anything novel. It is simply a combination of ideas that I have picked up from time to time. In regard to the results of the operation, it is a rare occurrence to have a failure.

DR. J. PRICE: There are a few points about which I should like to speak in connection with this procedure and like procedures. As Dr. Da Costa has said, this is an old operation, and is illustrated in all the books. It is the old operation upon the posterior wall, and has the merit he referred to, of, in many cases, making a superficial or skin perinæum. The principle of suturing described is one not adopted in any other branch of surgery, and Dr. Da Costa would himself not apply this principle in any other portion of the body. He says that sometimes he denudes a distance of three inches. In no other part would he approximate such a surface with three sutures, and three sutures will not close it.

A word in regard to the denudation. He speaks of four clips of the scissors—the button-hole, the central, and the two lateral. In many cases it is impossible to make such a denudation. You will button-hole the flap many times. That was the trouble with the Smith and Jenks operation. It is difficult to make a clean denudation in the midst of scar tissue by such a method.

One of these illustrations shows what takes place in many perineal tears. The skin-perineum side is not harmed; but if you place your finger in the sulcus on one side, you will find a sense of resistance which is absent on the other side. The sulcus is a deep one, and is a lateral tear. As has been remarked by Dr. Deaver, "It is for all the world like the lateral cut for stone." In such a case the procedure is almost a unilateral one to bring up the pelvic floor. It is just such a state of affairs that Emmet had in view in his classical operation for the restoration of the pelvic floor or diaphragm, and he has most beautifully succeeded.

In regard to the use of this needle. Dr. Da Costa has referred to the fifty-three cases reported by Dr. Thompson of the Columbia Hospital; but he lost one or two from tetanus, and this bayonet was at the bottom of the tetanus. I look upon this needle as wholly unjustifiable in any surgery. No man has a right to have such a thing among his instruments. I am surprised that more do not die from such a stab, including, as it does, incongruous masses of tissue, skin, fat, muscles, vessels, and nerves. I remember, while a student, of seeing a death from such a stab. I use the smallest sewing needle possible.

These procedures are very old, and are illus-

trated in all the old works. I consider all two-or-three-stitch methods of closing the perineum as emphatically imperfect procedures.

DR. JOHN C. DA COSTA: What Dr. Price has said in regard to one of these illustrations has nothing to do with the subject under discussion. He refers to a tear of the vagina, which has nothing to do with a tear of the perineum. If there is a line of cicatricial tissue on one side, we do not need to denude both sides to repair the condition. It is a simple matter to remove the scar tissue and sew it up, as in any other surgical operation.

I am sorry to hear this tirade against this needle. Some very able men use this needle, and they get very good results. Albert H. Smith, who did a good deal of gynæcological work, used a needle much like this. One of the most successful abdominal surgeons in Philadelphia uses a needle much like this. Surgeons in all branches of surgery use needles very like this—either a little more or a little less curved. One who came from Europe a year ago showed me a long, curved needle which he brought with him and said was Tait's needle. It was precisely similar to one which I have had in my box for some years for use in complete laceration of the perineum. This is only the Baker-Brown needle modified.

I do not know that Dr. Price has said anything against this operation. He has talked a good deal about the needle and about a tear that does not apply at all. I can only say, that, despite his fears, the operations are almost uniformly successful. Any one who can do the ordinary quill operation can do this. After analyzing the various operations eight years ago, I found that the best results were obtained by the old-fashioned operation. The quill operation, however, made a V-shaped sinus to the bottom of the wound, and sometimes caused a great deal of trouble; and it was to overcome this objection that I substituted the hard rubber bars with the wires running through.

(*To be continued.*)

DOMESTIC CORRESPONDENCE.

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Meeting of the Section on Practice, New York Academy of Medicine—Dr. A. Jacobi on Chronic Peritonitis—Discussion by Drs. Francis Delafield, Wm. H. Thomson and L. Weber.

At the October meeting of the Section on Practice of the Academy of Medicine Dr. A. Jacobi read a paper on "Chronic Peritonitis, with Special Reference to the Differential Diagnosis of Some of its Varieties." Most of the cases, he said, were of a secondary nature, with a great variety of causes. Having mentioned a considerable number of these, he referred to the case of a young woman whom he saw dying of acute peritonitis, who had been affected with purpura for some weeks. At the autopsy the peritonitis was found to have resulted from the rupture of some of the vessels of the diaphragm. He considered the most frequent cause of peritonitis a preceding peritonitis, and stated that in most cases examined after death the positive proofs of one or more attacks previous to the fatal one were found. He did not remember ever having seen a case of perityphlitis which did not exhibit the adhesions, discolorations and contractions due to former peritonitis, and he thought it probable that there were but few, if any, cases of foreign bodies entering the vermiform process unless the latter had previously lost its elasticity and contractility by an inflammatory change.

Alterations of the mucous membrane of the intestine, he went on to say, constituted the initial stages of local peritonitis in many instances, and of general peritonitis in some. It was not only the *intima* and the submucous tissue which suffered, but the muscular layer was also implicated in the morbid process. No morbid process could remain isolated in a locality supplied with an active blood and lymph circulation, and hence a simple intestinal catarrh might grow to be an enteritis, the enteritis a peritonitis. This condition of things was still more frequently observed in cases of intestinal ulceration, both acute and chronic. Even without perforation, an ulceration would lead to peritonitis which was mostly local, but liable to change into an acute attack under favorable circumstances. Where there was an open ulcer, or even one that had cicatrized months or years before, in the stomach or in the intestines (no matter what its nature might be), we frequently found opposite it a local peritonitis. In the peritoneal covering there was a thickening, circumscribed and distinct, which in recent cases was rather soft and accompanied by much vascular injection. In old cases the original cell proliferation had undergone organization and hardening, and the thickened spot was gray, or whitish and hard. It had lost its elasticity, and was very apt to burst under a moderate amount of pressure; thus leading to perforation. In the midst of apparent health intestinal perforation would often set in, and death ensue within a day; and at the autopsy the physician would learn that the patient was the victim of the perforation of the cicatrix of a typhoid ulceration perhaps contracted a dozen years before.

The diagnosis of chronic peritonitis, he said, was frequently missed. Unsuspected adhesions often existed around tumors, movable kidneys became fixed, intestines glued together, all with-

out recognizable symptoms. In chronic peritonitis respiration was not necessarily accelerated; and especially was this symptom lacking in pelvic peritonitis, perimetritis and pericystitis. There might be occasional vomiting, particularly when there happened to be an intercurrent acute catarrh; but there were other conditions, as, for instance, renal and biliary colic, which were more likely to exhibit this symptom, and to an excessive degree. It was often entirely absent, and even in many acute cases of peritonitis this was the case. Constipation was frequent, but diarrhœa, on the other hand, was not unusual. The horizontal position was often uncomfortable, but a common colic, depending on gas not absorbed or expelled, also caused drawing up of the knees. When the horizontal posture was shunned in chronic peritonitis, however, the patient was more apt to remain quiet with raised knees than one who was suffering from flatulency; in which condition the limbs were generally tossed about continually.

While the abdomen was apt to be tumid, it was to be remembered that general adiposity is most fully developed in this region, that women who have borne children are apt to have a large and prominent abdomen, that the abdomen of a healthy infant is so large as to measure one-third of its length, that a simple hysterical dilatation and inflation may simulate the tumefaction resulting from peritonitis, and that there may occur a local dilatation of the intestine from habitual constipation only. Moreover, in hysteria there was sometimes met with an œdematous swelling of both hypogastric regions; which would still more seriously complicate the diagnosis. The surface of the abdomen exhibited networks of dilated veins more frequently in peritonitis than in any other condition except certain hepatic diseases. Inspection might also reveal solitary convolutions rising above the surface, and palpation and percussion might lead to the discovery of exudations of various sizes and shapes; these consisting of either organized material, thickened omentum, or intestines glued together. Fluctuation would show the presence of fluid more readily than percussion, which might fail in this, that there might be adhesions between the parietal peritoneum and intestines in the flanks. The gas contained in the adherent bowel might yield a tympanitic percussion note although the region might be filled with fluid. A change of position, from one side to the other, or from the horizontal to the vertical posture, or *vice versa*, might contribute to dispel the doubt.

A chronic peritonitis was sometimes diagnosticated in the following manner: The patient lies on his back, with the extremities now extended and now flexed. Pressure is tried: hard or light, sudden or gradual, superficial or deep. According to the seat of the pain experienced, inflammation or adhesion is most manifest. When deep pressure is first made with the palm or finger there may perhaps be no pain. Relieve the pressure suddenly, and a local, very distinct, and circumscribed pain may be felt. Repetition of the experiment will always give the same result; the symptom being elicited by the sudden change in the relative position of the bowels. Not only pain, but the presence of hard, floating exudations can be distinguished by this and similar manœuvres.

Pain of varying degree and persistency, he continued, was a very frequent symptom in chronic peritonitis. Its intensity often depended on the degree of irritation or congestion present, and acute attacks were frequent where there was a cause for exacerbations. Extensive peritonitis in the pelvis might not give rise to pain, except such as resulted from defecation, sexual intercourse, or micturition. In some cases the pain of chronic peritonitis could not be distinguished from the enteralgia produced by other causes, such as abnormal contents, fermentation, and flatulency. Indeed, the anatomical causes of chronic peritonitis gave rise to these very conditions; for by it the intestinal movements were retarded, and from it there might result stenosis and adhesions, interfering with every function.

The results of chronic peritonitis were very various. A simple attack of acute exudation might shape the future of the patient, and the histories of previous acute attacks were often not remembered. Experience showed that the most extensive changes might occur without any known history whatever.

The concluding portion of the paper was devoted to an exhaustive consideration of the important form of chronic peritonitis known as tabes mesenterica. The different manifestations in different cases of this affection Dr. Jacobi thought went to prove that there were several distinct varieties of tabes, depending on different causes and attended with varying anatomical alterations. Besides the simple secondary hyperplasia of the mesenteric glands, resulting in obstruction, and the tubercular infiltration terminating in the severe disturbance of function, he said there was a third condition which led to symptoms constituting what is known as tabes mesenterica, viz.: chronic tubercular peritonitis. The diagnosis of tubercular peritonitis was apt to be quite difficult, and there were many chronic cases which could not be differentiated from non-infectious peritonitis and simple inflammatory processes. There were, however, cases of tumid abdomen with atrophy, of both an acute and chronic character, in which the nature of the affection could be made out with some degree of certainty. The prognosis of so called tabes mesenterica was always uncertain except in the very worst cases. It was absolutely fatal when there was peritoneal and glandular tuberculosis complicated with or de-

pending on generalized tuberculosis. In cases where the diagnosis of a non-infectious hyperplasia of the mesenteric glands could be made out, it was decidedly more favorable. When the diagnosis of chronic peritoneal tuberculosis had been made, the case was less promising; still the possibility of recovery, or partial recovery, was not excluded.

In the discussion on the paper Dr. Francis Delafield said that there were few morbid conditions of greater clinical interest than chronic peritonitis, as it was constantly coming up for diagnosis, and as many mistakes regarding it were made as about any affection with which he was acquainted. He had been accustomed to look at the disease with reference to the anatomical conditions present, and hence divided the cases into three classes: *first*, those in which there were simply adhesions of connective tissue; *second*, those in which there were present both adhesions and fluid, either serous or purulent; and *third*, those in which there was diffuse thickening with fluid, but without adhesions.

In the first class of cases the condition was often not recognized until it was revealed by an autopsy. The symptoms often corresponded very nearly with those met with in what is known as "irritable colon," and it was very difficult to distinguish between the two. In many cases it was also difficult to distinguish it from tubercular peritonitis, when, in addition to connective tissue adhesions, there was present a large waxy liver. Still another condition with which it was likely to be confounded was a dilated pylorus, in which the stomach felt to the touch almost precisely like a mass of intestines matted together. Pain in different parts of the abdominal cavity gave the physician as much trouble in the way of making a diagnosis, and there was, in fact, very little to distinguish the pains due to different causes from each other.

In the second class of cases it was often difficult to distinguish the condition from tubercular peritonitis, and the diagnosis between it and carcinoma was also difficult. Again, we were likely to be puzzled by the shape which the peritonitis took. In certain instances fluid was met with in different parts separated by partitions, and there were the physical signs of a tumor with fluid. What seemed like a tumor, however, was simply the intestines matted together.

In the third class of cases it was difficult to distinguish the affection from tuberculous peritonitis, from multiple cancer, and from cirrhosis of the liver. Especially was it hard to distinguish it from the latter when the capsule of the liver was involved, since we were apt to have the gastric symptoms and the vomiting of blood which are so often met with in that affection.

Dr. Wm. H. Thomson called attention to a feature which appeared to be diagnostic of cancerous peritonitis, viz.: a remarkably low percentage of urea in the urine (a condition not found in tuberculous or other forms of peritonitis), and related two cases in which he had found it present. He had also found in such cases a diagnostic sign which Germain Sée had called attention to in cancer of the stomach, viz.: tenderness and enlargement of the post-clavicular glands. Again, in cancerous peritonitis there were not the same fluctuations in temperature that were met with in the tubercular form. As to tubercular peritonitis, he had met with one case in a young man in which there was distinct redness about the umbilicus, a sign of this affection which Wilks had pointed out. When ascites was present in chronic peritonitis it rendered it very difficult to distinguish between this condition and cirrhosis of the liver, and especially where the history pointed to perihepatitis. The previous history of the patient, as to habits, etc., however, would generally throw some light on the question whether in any given case we had to do with cirrhosis or not.

Dr. L. Weber said that he had never seen a case of chronic peritonitis, properly so called, which was not infectious in its nature. Such cases as those described in the early part of the paper he would look upon as ones in which there had previously been acute peritonitis, with its accustomed results. Of these, adhesions were the most frequent, and they often had the effect of impeding the functions. He had no objection to calling such cases chronic peritonitis, although personally he did not consider them as true instances of general chronic peritonitis. They simply exhibited the results of adhesions caused by the acute disease, and when in such cases a fatal result occurred the patient really died of acute peritonitis due to perforation. As to tabes mesenterica, he believed that this was always a tuberculous affection, and he incidentally remarked that he had been much impressed by the reports of the favorable results which had recently been obtained in this disease by opening the abdomen and dusting the affected parts with iodoform.

P. B. P.

MISCELLANY.

OHIO STATE SANITARY ASSOCIATION.—We have received from Dr. R. Harvey Reed, the energetic Secretary of this Association, a programme of the seventh annual meeting, to be held in Dayton, O., on the 21st and 22d inst. The following papers will be read:

"The Relations of Theologians to Sanitarians," Dr. D. J. Snyder, Scio; "Sanitation vs. Medication," Dr. S. P. Bishop, Delta; "Recent Advances in Etiological Science," Dr. E. R. Eggleston, Mt. Vernon; "Sanitation in Small Villages," Dr. Austin Hutt, Waverly; "Bodily Comfort as a Sanitary Object," Dr. G. C. Ashmun, Cleveland; "Influence of Climate Upon So-called Malarial Fevers," Dr. Wm. Owens, Cincinnati; "The Cadaveric and Vital Alkaloids," Prof. C. C. Howard, Columbus; "Will

General Sanitation Ever Become Popular?" Dr. John McCurdy, Youngstown; "Address of Welcome," Hon. A. D. Witt; "Response to the Address of Welcome;" Dr. R. Harvey Reed, Mansfield; Poem, "Bacteria, or the Flies we Feed on and the Bugs that Kill Us," Dr. W. S. Battles, Shreve; President's address—1. "The use of Pork; its relations to Scrofula and Consumption." 2. "Mosaic prohibition of Pork, as taught by the Scriptures, and the prejudices of most of the Ancient Nations to its use as food." 3. "Description of Trichina-Spiralis and their dangerous effect on the human body," Dr. D. H. Beckwith, Cleveland; "Food as a Therapeutic Agent," Dr. H. J. Herrick, Cleveland; "The Best Food for Man," Dr. J. D. Buck, Cincinnati; "The Relation of Water Supply to Disease," Dr. H. J. Sharp, London; "The Necessity of Uniform Rules, Regulations, Reports and Records of Local Boards of Health," Dr. F. Gunsaullis, Columbus; "The Sanitary Teachings of the Bible," Prof. E. T. Nelson, Delaware; "The Hygiene of the Chronic Insane," Dr. J. W. Scott, Cleveland; "Garbage and Night Soil Crematories From a Financial and Practical Standpoint," Dr. Geo. I. Garrison, Wheeling, W. Va.

Arrangements have been made for reduced railroad rates on the certificate plan, full particulars of which may be learned on application to the Secretary at Mansfield, Ohio.

LETTERS RECEIVED.

Dr. R. C. Van Wyck, Hopewell Junction, N. Y.; Dr. D. W. Jones, Portsmouth, N. H.; *Gazette de Gynécologie*, Paris, France; Medical and Surgical Sanitarium, Battle Creek, Mich.; J. H. Chambers & Co., St. Louis, Mo.; Dr. George S. Sabin, Black River, N. Y.; Dr. J. W. Nelson, Winnetka, Ill.; Dr. Charles Smart, Washington; Dr. John O. Rohé, Rochester, N. Y.; Dr. Charles C. Hunt, Dixon, Ill.; Health Restorative Co., New York; The Maltine Manufacturing Co., New York; Theodore Metcalf & Co., Boston; Dr. P. B. Porter, New York; George T. Nicholson, Topeka, Kan.; J. H. Bates, New York; Dr. A. L. Hummel, Philadelphia; Dr. Dudley P. Allen, Cleveland, O.; Geo. P. Rowell & Co., Philadelphia; Dr. F. A. Weir, Jesup, Ia.; Dr. Wm. G. Gibson, Saranac Lake, N. Y.; Dr. Thos. S. K. Morton, Philadelphia; Philadelphia Polyclinic; Dr. I. E. Atkinson, Baltimore, Md.; Jefferson Medical College, Philadelphia; Dr. F. B. Hemenway, Kalamazoo, Mich.; Dr. J. R. Autrey, Columbus, Ark.; Frank Kiernan & Co., New York; Gladstone Lamp Co., New York; Dr. Bransford Lewis, St. Louis, Mo.; Dr. Léon Leibowitz, Vienna, Austria; Ward Bros., Jacksonville, Ill.; Dr. Henry O. Marcy, Boston; Dr. Henry D. Fry, Washington; Dr. J. W. Park, Berlin, Germany; R. A. Robinson & Co., Louisville, Ky.; Longmans, Green & Co., New York; Dr. F. F. Loury, Chester, Pa.; Lea Bros. & Co., Philadelphia; Publishers Commercial Union, Chicago; Provident Chemical Works, St. Louis, Mo.; S. R. Niles, Boston; Dr. T. J. Turpin, Tallulah, La.; Dr. C. B. Powell, Albia, Ia.; Dr. W. H. De Long, Emporium, Pa.; Oneita Springs Co., Utica, N. Y.; Dr. J. H. Lyon, Roslyn, Wash.; Dr. H. J. Smith, Blackshear, Ga.; Dr. Geo. T. Welsh, Keyport, N. J.; Dr. W. N. Yates, Fayetteville-Ark.; Reed & Carnrick, New York; Dr. W. F. Grinstead, London, Eng.; T. W. Haight, Waukesha, Wis.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 19, 1889, to October 25, 1889.

So much of par. 2, S. O. 241, October 16, 1889, from this office, as directs Capt. Louis Brechemin, Asst. Surgeon, to report for duty at Ft. Apache, Ariz. Ter., is revoked. He will report in person to the commanding officer, Presidio of San Francisco, Cal., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. Peter R. Egan, Asst. Surgeon U. S. Army, on being relieved from duty at Camp Eagle Pass, Texas, will report in person to the commanding officer, Ft. McIntosh, Tex., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William J. Wakeman, Asst. Surgeon U. S. A., relieved from duty at Ft. Walla Walla, W. T., and will report in person to the commanding officer, Ft. Bidwell, Cal., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William B. Davis, Asst. Surgeon U. S. A., relieved from further duty at Ft. Porter, N. Y., and will report in person, upon expiration of his present sick leave of absence, to the commanding officer, Ft. Preble, Maine, for duty. S. O. 248, A. G. O., October 24, 1889.

First Lieut. Paul Clendenin, Asst. Surgeon U. S. A., relieved from duty at Ft. McIntosh, Tex., and will report in person to the commanding officer, Camp Eagle Pass, Tex., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. A., relieved from duty at Newport Bks., Ky., and will report in person to the commanding officer, Ft. Yates, Dak., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

First Lieut. Henry I. Raymond, Asst. Surgeon U. S. A., upon being relieved from duty at Ft. Bidwell, Cal., will report in person to the commanding officer, Newport Bks., Ky., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Capt. William C. Shannon, Asst. Surgeon U. S. A., relieved from duty at Ft. Yates, Dak., and will report in person to the commanding officer, Ft. Apache, Ariz. Ter., for duty at that station. Par. 7, S. O. 248, A. G. O., October 24, 1889.

Asst. Surgeon Marcus E. Taylor, U. S. A., relieved from duty at Ft. Stanton, N. M., and ordered to Boise Bks., Idaho. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Surgeon Joseph R. Gibson, U. S. A., relieved from duty at Ft. Sheridan, Ill., and ordered to Governor's Island, New York Harbor. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon Louis M. Maus, U. S. A., relieved from duty at Ft. Porter, N. Y., and ordered to Ft. Stanton, N. M. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon Edwin F. Gardner, U. S. A., relieved from duty at Ft. Lewis, Col., and ordered to Ft. Porter, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Surgeon Clarence Ewen, U. S. A., relieved from duty at Madison Bks., N. Y., and ordered to Willet's Point, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Surgeon Alfred C. Girard, U. S. A., relieved from duty at Boise Bks., Idaho, and ordered to Ft. Niagara, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Asst. Surgeon John D. Hall, U. S. A., relieved from duty at Ft. Niagara, N. Y., and ordered to Madison Bks., N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

First Lieut. William P. Kendall, Asst. Surgeon U. S. A., leave of absence extended one month. Par. 6, S. O. 244, A. G. O., October 19, 1889.

Capt. Edgar A. Mearns, Asst. Surgeon U. S. A., granted leave of absence for two months. Par 5, S. O. 244, A. G. O., October 19, 1889.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending October 19, 1889.

Surgeon John Vansant, granted leave of absence for fifteen days. October 16, 1889.

Surgeon C. B. Goldsborough, leave of absence extended thirty days on surgeon's certificate of disability. October 18, 1889.

Asst. Surgeon T. B. Perry, ordered to temporary duty at San Francisco, Cal. October 15, 1889.

Asst. Surgeon G. T. Vaughan, when relieved, to proceed to Evansville, Ind., for temporary duty. October 9, 1889.